The Convention Issue

THE CANNING TRADE

THE Journal OF THE Canning AND Allied Industries

ESTABLISHED 1878

1878—FOR 51 YEARS THE CANNED FOODS AUTHORITY—1930

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Off to a flying start

WE'VE all returned from an interesting, informative convention. Added to the knowledge about canning which each of us has, the ideas and methods picked up from other successful canners have contributed a new outlook on this rapidly developing industry of ours.

● Now for 1930. We're off to a flying start for a truly record year. Put into practice, what all of us saw and heard and learned can have but one result—even better quality in the can, bigger sales, greater prosperity than ever in the past.

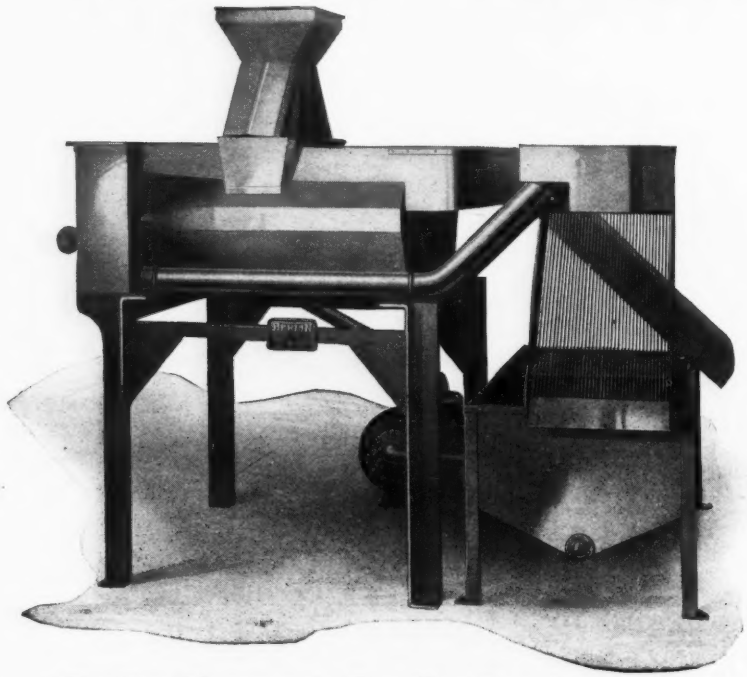
● And, for our part, Canco looks forward to the privilege of again serving its old friends, of winning new ones—of giving even greater helpfulness to aid in making the new year a successful year for every canner.

AMERICAN CAN COMPANY

The Complete Detailed Report

Just One of Our **21** *New Machines For 1930*

Berlin Chapman
Quality Pea Separator



Berlin Chapman Quality Pea Separator

Berlin Chapman Quality Pea Separators will separate peas at any line desired, between fancies and near fancies, between near fancies and extra standards, or between standards and extra standards. They are very simple in operation and under certain conditions will save you the price of the machine in two days operation.

Berlin Chapman Company has a machine for every operation in a pea plant, as well as a complete line of machinery for any canned food.

BERLIN CHAPMAN CO., Berlin, Wis.

BERLIN CHAPMAN
CANNING MACHINERY
"A Single Unit or A Complete Canning Plant"

WHAT ONE LETTER SAID ABOUT HEEKIN PERSONAL SERVICE---

IT is with pardonable pride that Heekin executives feel they are a part of the business of each individual canner whose requirements they supply. Heekin personal service, and the interest taken in the canners' own problems, have built a reputation that is one of Heekin's greatest assets.

A recent letter, written by a canner who had visited the Heekin factories to discuss his problems and his requirements for the season, said: "I am glad to do business with a company that takes such a wholehearted interest in the problems of its customers, and tries to make its business relations helpful as well as friendly. The Heekin organization is a clearing house for helpful suggestions and profitable ideas. I am glad to do business with the Heekin Can Company."

Perhaps Heekin Personal Service can be of assistance to you.

Heekin Cans

THE HEEKIN CAN COMPANY, CINCINNATI, O.

This is the Age of Specialists and Our Specialty Is

CANNERS' SEED PEAS

OUR organization is comprised of trained men who devote their entire time to the improvement and production of our choice strains of seed peas. They are concerned solely with the problem of best serving the canners of peas. Is it strange that our reputation is firmly established as specialists in our line — second to none?

GALLATIN VALLEY SEED COMPANY

Bozeman, Montana

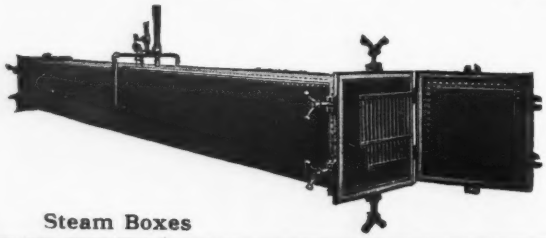
Now booking orders for 1930 contract growing.

ZASTROW'S PROCESS ROOM EQUIPMENT

Zastrow Hydraulic, Steam Impelled Circle Crane, radius up to 18 ft.

Improved Process Kettle or Retort 40" x 72" and other sizes.

Process Crates, Standard 3, 4 & 5 tiers. Also Special Sizes



Steam Boxes

MADE BY

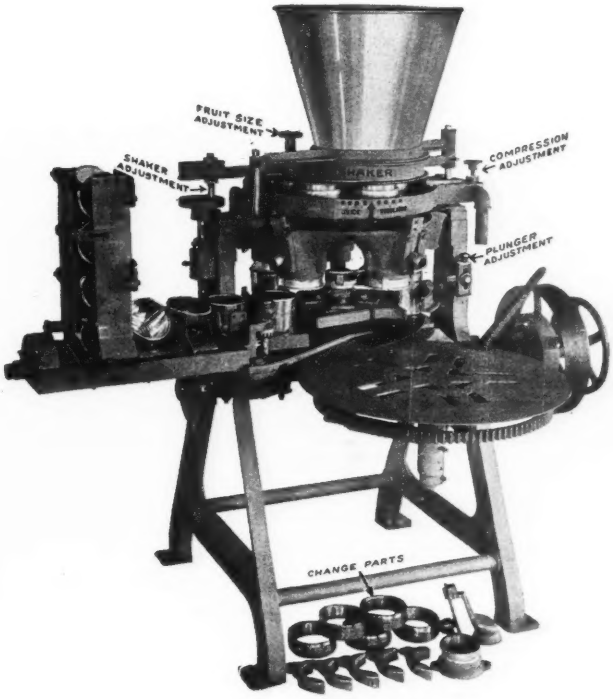
ZASTROW MACHINE CO., Inc.

Foot of Thames St.
BALTIMORE, MD.

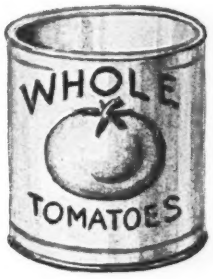
AYARS LATEST MODEL

CUT STRING BEAN and TOMATO FILLER

FOR CUT STRING BEANS



FOR TOMATOES



Also For Beets, Cherries, Plums etc.

This filler is the result of years of experience. Was used in many Canneries East, South and West.

RESULT
Ordering More Fillers.

NEW SHAKER
FRUIT ADJUSTING PLATE
COMPRESSION ADJUSTMENT
JUICE REGULATOR
SHORT FUNNELS WITH BEAN EXTENSION

Remarks—**Packers Say "Best Filler for tomatoes I ever used."**
"For String Beans it is perfect."

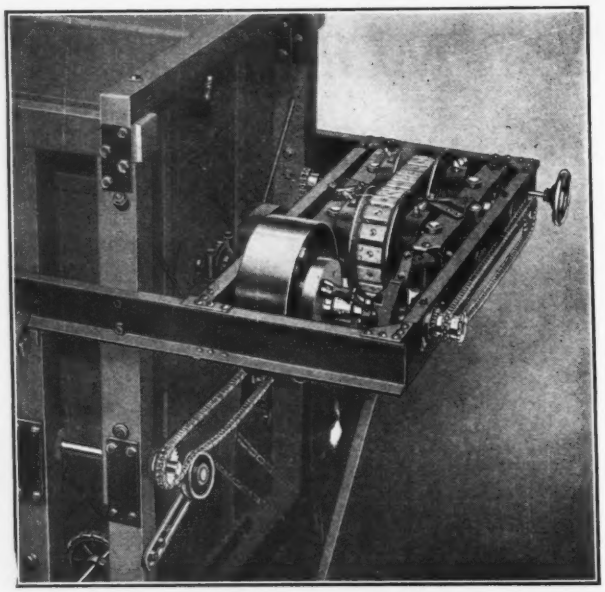
Write for Prices and Circular

Manufacturers of

Beet Topper	**Beet Slicer**	**Tomato Trimmer & Scalder**	**Rotary Syruper**
Beet Grader	**Process Clock**	**Hot Water Exhauster**	**Pea & Bean Fillers**
Beet Slitter	**Corn Milk Shakers**	**Cooker**	**Angle Hanger**
Beet Quarterer	**Tomato Washer**	**Liquid Plunger Filler**	**Can Sterilizer**
Beet Peeler	**Tomato Corer**	**Can Cleaner**	**Friction Clutch**

AYARS MACHINE COMPANY

Salem. New Jersey



1928 Model Viner

MAXIMUM CAPACITY AT ALL BEATER SPEEDS

CONSTANT speed drive to REEL thru roller chain and live travellers mounted on TIMKEN BEARING SHAFTS.

VARIABLE speed drive to BEATER CYLINDER ONLY

Patented March 15, 1928
(REEVES Transmission)

CHISHOLM-RYDER COMPANY, Inc.
NIAGARA FALLS, N. Y.

MANUFACTURERS OF

Green Bean Graders
Green Bean Cleaners
Conveyors

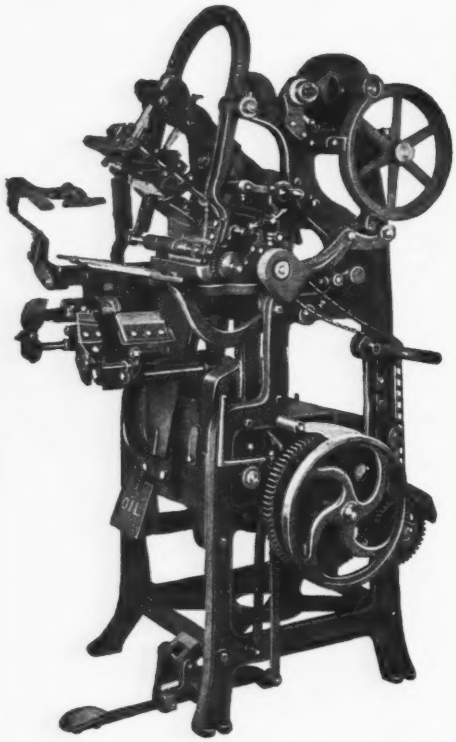
Can Markers
Lift Trucks

Green Pea Viners
Green Pea Feeders
Green Bean Snippers

SPECIAL MACHINERY BUILT TO ORDER.

SPECIAL AGENTS

A. K. ROBINS & COMPANY, INC. Baltimore, Md.
JAMES Q. LEAVITT CO. Ogden, Utah
BROWN BOGGS FOUNDRY & MCH. CO., Ltd. Hamilton, Ontario



Service Better *Service*

Is the Kind Rendered to the users of
ERMOLD LABELERS
Both by the Machine and the Company back of them.

A FINER LABELER HAS NEVER BEEN BUILT FOR THE PURPOSE FOR WHICH IT IS INTENDED.

Edward Ermold Company

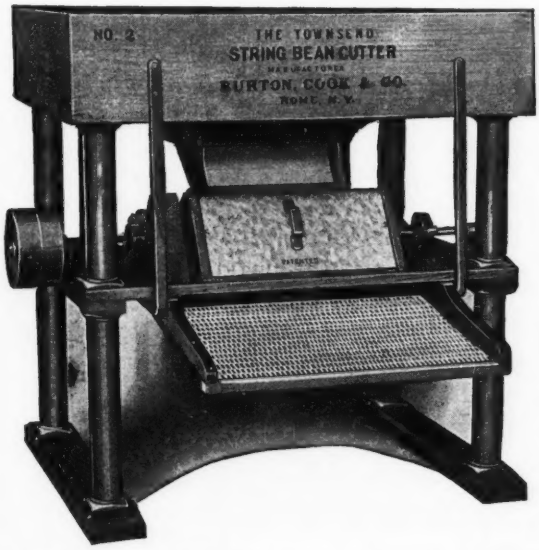
Worlds Largest Builders of QUALITY Labeling Machines

Hudson, Gansevoort & Thirteenth Sts.,
NEW YORK CITY, N. Y.

***BRANCHES*—All Over the World**

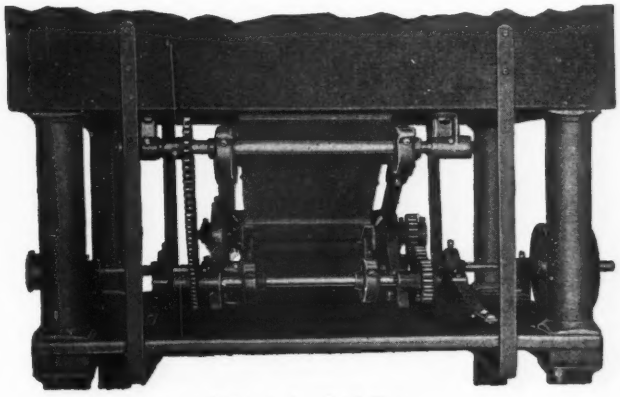
The TOWNSEND String Bean Cutter

1930 offers the first radical String Bean Cutter improvements in 20 years: it REMAINS the best solution of the problem of cutting String Beans, Pickles, etc.



The TOWNSEND has always been the choice of a majority of packers because of its capacity, its efficiency, its economy, its simplicity and durability: this year we offer improvements which keep the TOWNSEND ahead of the procession 17 years, the life of our patents.

Two of these improvements are briefly outlined below: it will be a pleasure to us to have the opportunity of sending you our complete catalog.

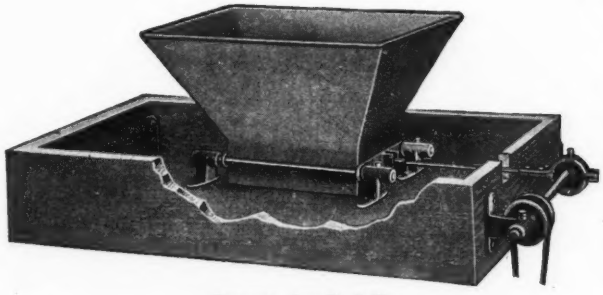


Patent Applied For

The new chute is kept in vigorous motion throughout its entire length, in two directions, by the mechanism shown in the cut.

The way beans, etc., go down through it is a revelation: it increases the capacity of the machine at least 25%.

Fully described in our new catalog.



Patent Applied For

The new TOWNSEND Automatic Hopper Feed has a sidewise motion across the top of the chute like the movements of a good hand operator, but, unlike a human operator, it is not subject to fatigue.

It will take produce from any flat conveyor and will keep the chute filled better than any person could.

One man can look after the feeding of five TOWNSENDS equipped with this device and the saving in labor, combined with the increased output, pay back the extra cost many times in a season.

Send for the new catalog giving full details.

NOW is a good time to send us your inquiry—the special February discount is 8% off list and, judging by the volume of business we are booking, it will be especially advisable this year to have your order entered early if you wish to be sure of shipment in time for your needs.

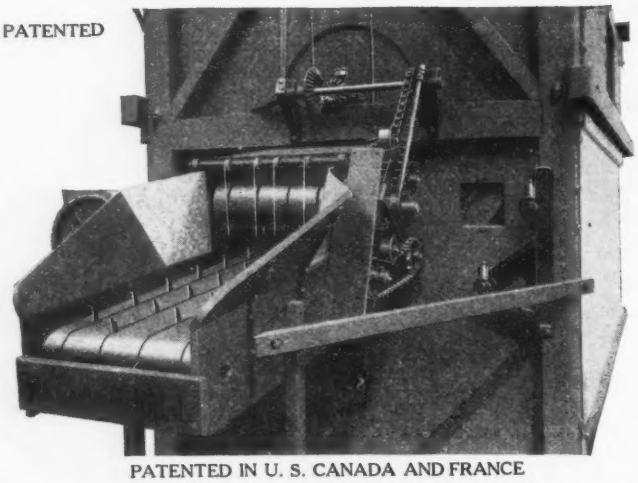
Burton, Cook & Co., Inc.,

Rome, N. Y.

(Successors to Z. P. Townsend, the original patentee)

Ideal Viner FEEDER with Distributor

PATENTED



PATENTED IN U. S. CANADA AND FRANCE

On Every Viner Is Economy

No viner can do satisfactory work when its beaters are obliged to work on heavy mats or bunches of vines.

Separation of the vines by the feeder is, therefore, essential to best results.

Hamacheck Ideal Viner Feeders with distributors are the only feeders that thoroughly separate the vines. The savings effected, over the use of any other viner feeder, are so large that it is not unusual to hear pea packers say that the Ideal Viner Feeders more than save their cost each season.

OVER 2000 IN USE

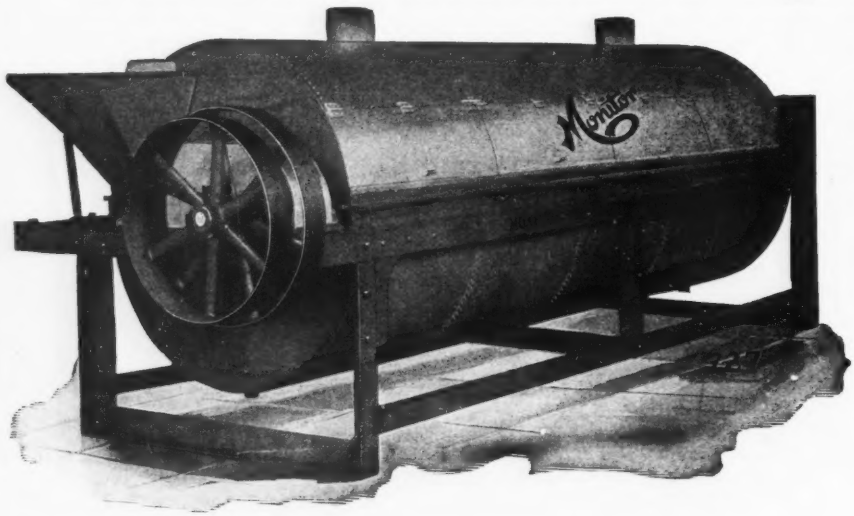
IDEAL Feeders have been greatly improved during the past two years.

FRANK HAMACHEK MACHINE CO.

Kewaunee, ESTABLISHED 1880. INCORPORATED 1924 Wisconsin

Manufacturers of VINERS, ENSILAGE DISTRIBUTORS and CHAIN ADJUSTERS

Years of Manufacturing Experience



are back of the MONITOR Blanchers.

It is no experiment and has all the refinements needed in a high class Blancher.

We make no claims for it that the machine will not fullfill in practical use.

When you put a MONITOR Blancher in your plant, you can look forward to definite and satisfactory results.

Canadian Plant
HUNTLEY MFG. CO., Ltd.
Tillsonburg, Ont.

HUNTLEY MFG. CO.

P. O. Drawer 25 BROCTON, N. Y.

(Formerly at SILVER CREEK, N. Y.)

SPECIAL AGENTS
A. K. Robins & Co., Inc., Balto., Md.
King Sales & Engineering Co.
669 Howard St.
San Francisco, Cal.
Brown Boggs Ltd., Hamilton, Ont.
Cannon Supply Company
Salt Lake City, Utah

Kyler Boxers
and
Labelers

Are They Up-to-Date?

A careful analysis of the design and construction of Kyler Boxing and Labeling machines will convince you of their superiority. We invite your investigation.

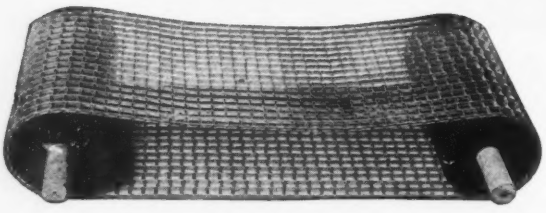
We combine our own experience and genius with suggestions received from users of our equipment. This accounts for Kyler leadership in the LABELING AND BOXING MACHINE FIELD.

We give you the benefit of our twenty-seven years experience.

Westminster Machine Works
Westminster, Md., U. S. A.

KITTREDGE LABELS CHICAGO

HERCULES Sanitary Flexible Steel Conveyor



Used by Canners for every purpose: on sorting tables, scalders, washers, exhausters, etc.

Made of best galvanized ribbon steel.

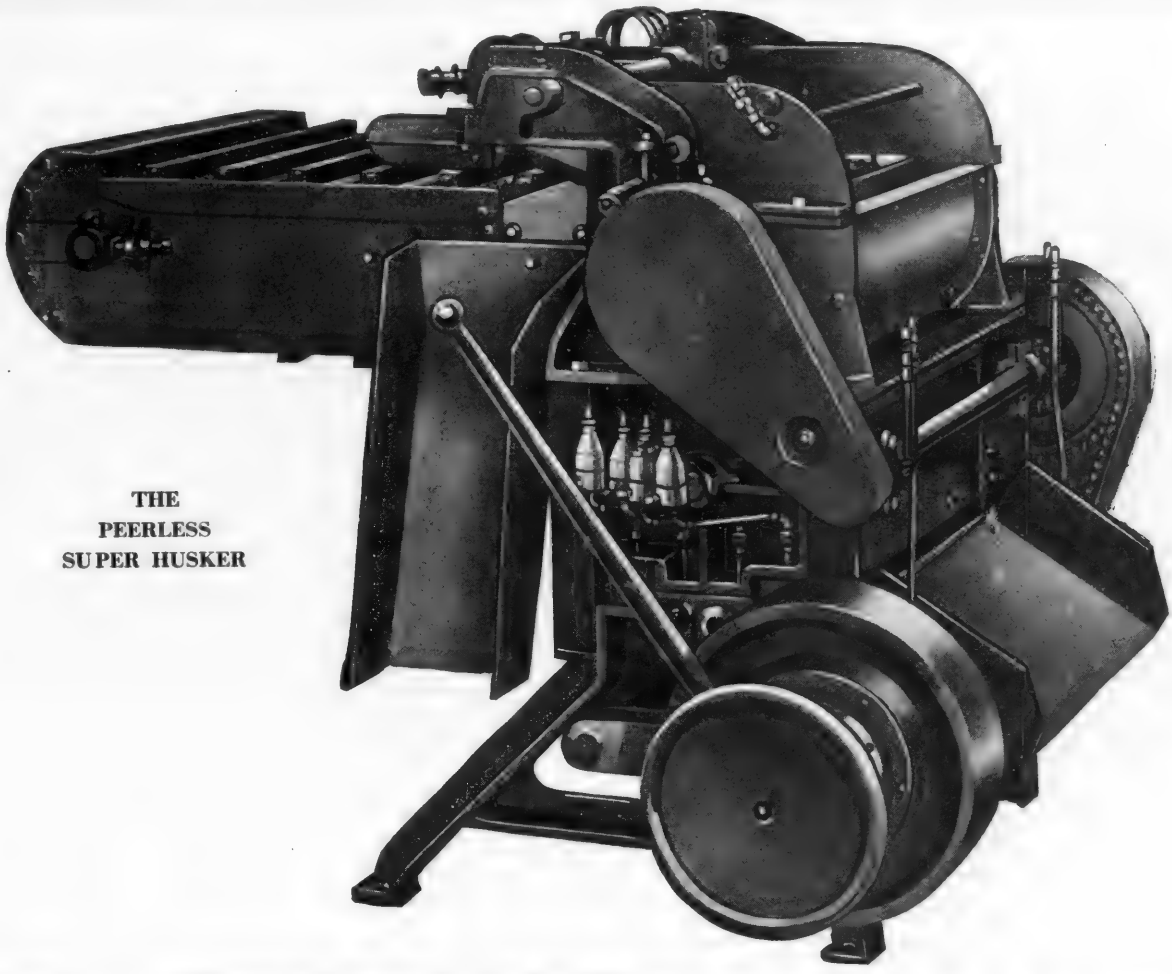
Standard widths - 12, 18, 24, 30 inches - carried in stock. Other widths, made to order. One inch mesh - also half inch mesh. Strong, durable, labor saving and efficent. Runs smoothly, lies flat and does not climb the pulleys. One hundred percent sanitary.

Made up in one hundred foot rolls, or less. Can be easily taken apart and made into any length conveyor. Extra cross wires supplied with each roll. We know it gives satisfaction - our customers tell us so. Your dealer has it.

Manufactured by

La Porte Mat & Manufacturing Company

La Porte, Indiana



THE
PEERLESS
SUPER HUSKER

The "HIGH-SPOT" of the show
The Peerless Super Husker

If you didn't visit the Sprague-Sells Booth at the Convention and see the Peerless Super Husker, with all its 1930 improvements and refinements, actually operating on green corn, you sure missed something.

Your next best bet is to send for full particulars of this truly remarkable husker that husks corn so much faster, cleaner and cheaper than any other machine.

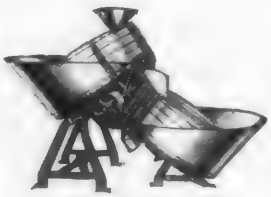
Send today for our New General Catalog giving all the latest details of the New Super Husker, as well as all other canning machines in the Sprague-Sells and Anderson-Barngrover lines. It covers many brand-new machines shown for the first time in any catalog. It is free.

SPRAGUE-SELLS CORPORATION

308 West Washington Street, Chicago, Illinois

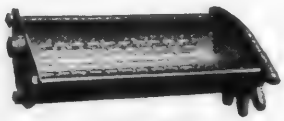
DIVISION OF

FOOD MACHINERY CORPORATION

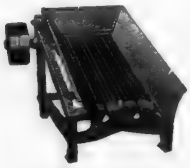


HANSEN QUALITY GRADER

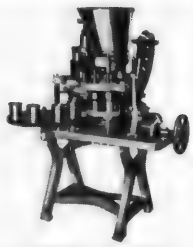
HANSEN FRUIT AND VEGETABLE FILLER



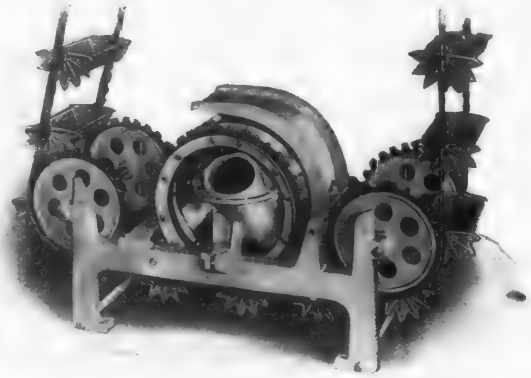
HANSEN STEEL CONVEYOR BUCKETS



HANSEN FOUR ROLL BEET TOPPER



HANSEN SANITARY PEA AND BEAN FILLER



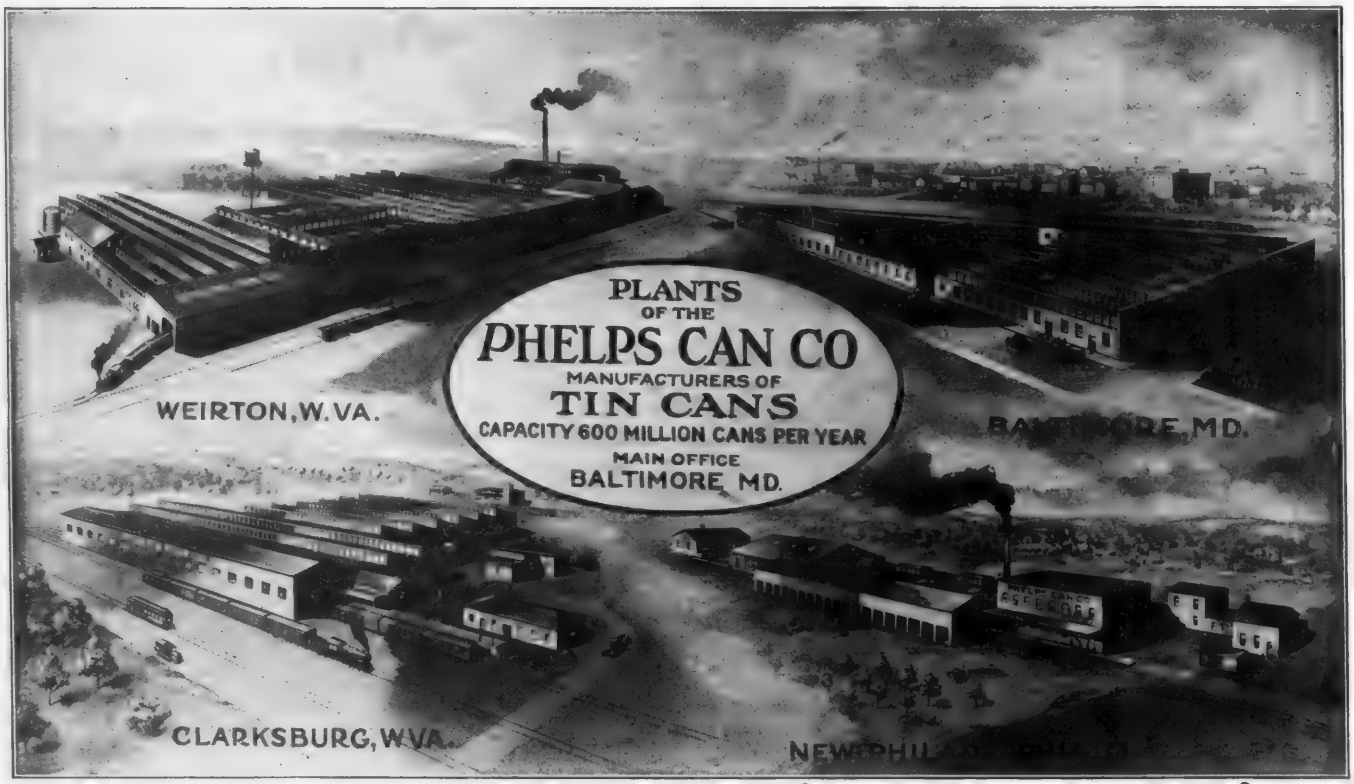
A LARGE PERCENTAGE

of all conveyor boots used are Hansen. That is because Hansen Conveyor Boots do the job so well and last so long. Many of the first Hansen Boots built are still in service. The buckets are loaded without spilling or crushing of peas. The Boot is sanitary and can be quickly taken apart for cleaning without the use of tools.

Write For Further Information.

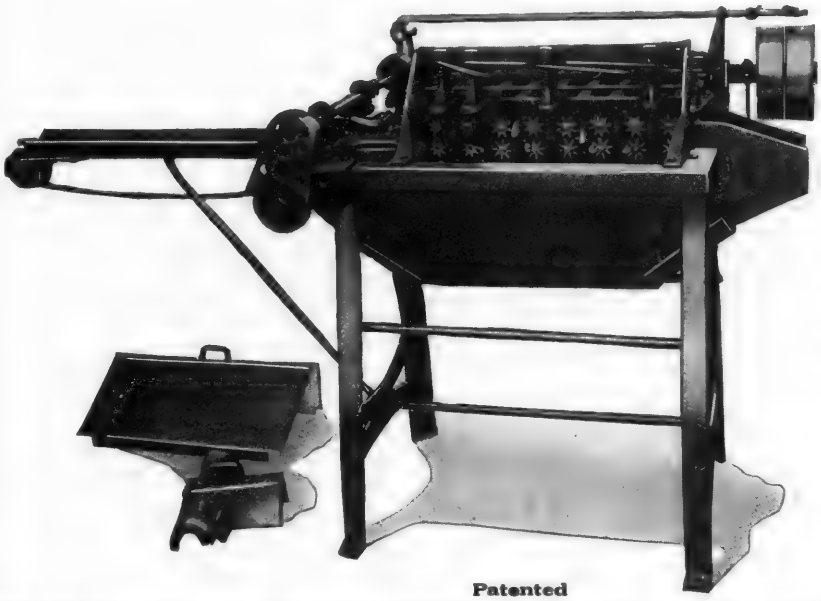
Hansen Canning Machinery Corporation

Cedarburg, Wisconsin



The Morral Corn Cutting Machine

For Either Maine Style or Whole Grain Corn



Patented

The illustration shows the Morral Corn Cutter arranged for cutting Maine Style Corn.

We are now building this cutter with attachments for cutting Whole Grain Corn. The Whole Grain Corn Cutter was installed in several factories the past canning season and gave fine satisfaction.

The Morral Whole Grain Corn Cutter has several advantages over other whole grain corn cutters. It has the same capacity as the Maine style cutter and has more than twice the capacity of other whole grain cutters. It will cut the small ears and small nubbins as well as the large ears without clogging. It will cut the corn before or after blanching which ever is desired. It is arranged to scrape the cob after the whole grain kernels are cut off. The whole grain kernels are separated from the scrapings so the whole grain kernels and the scrapings can be canned separately. This is a great saving. However, it is not necessary to scrape the cob if not desired as the cutter will get as good yield of cans per ton as other whole grain cutters when the cob is not scrapped.

READ WHAT TWO PROMINENT CANNERS SAY ABOUT THE WHOLE GRAIN CUTTER:

W. R. ROACH & CO.
GRAND RAPIDS, MICH.
December 10, 1929.

Morral Bros.
Morral, Ohio.
Gentlemen:

Answering your letter of December 5th, we tried out your Whole Grain Corn Cutter, which you shipped us, and we found the work that this cutter would do was very satisfactory and we believe you have a splendid machine and one that will give the canners splendid results, as it has lots of capacity and is well built. I know of no reason why it won't answer every purpose the canner requires for cutting whole grain corn.

This cutter will also cut Maine style or creamed corn in a way that will satisfy anyone, by leaving off the whole grain attachments.

Wishing you success, we are
Yours very sincerely,
W. R. ROACH & CO.
Per W. R. Roach.

WARRENSBURG CANNING COMPANY
WARRENSBURG, ILLINOIS
December 30, 1929.

Morral Bros.
Morral, Ohio.
Gentlemen:

We have used the Morral Whole Grain Corn Cutter, and we secured good results. We do not see what more one could expect of a Whole Grain Corn Cutter.

The Morral machine has unusual capacity, and operation cost and upkeep is very nominal. It is a pleasure to commend your Whole Grain Corn Cutter, and at any time we shall be glad to give you our strongest testimonial.

Wishing you a prosperous and happy New Year, we are
Yours truly,
WARRENSBURG CANNING COMPANY.
By L. A. Sears, President.

LAS:MC

Manufacturers
Corn Husking Machines
Corn Cutting Machines
For Maine Style Corn
Whole Grain Corn Cutters
Labeling Machines
And other Machinery

Morral Brothers
Morral, Ohio

BROWN BOGGS FOUNDRY & MACHINE CO., Ltd.
Hamilton, Ont., Canada
Sole Agents for Canada

F. H. LANGSENKAMP CO.

Indianapolis, Ind.

COPPER STEAM JACKET KETTLES

All Types

PULPERS, FINISHERS

KOOK-MORE-KOILS

Special C.M.C.

(*Clevo Metallic Coating*)

The Heat, Acid and Rust Resisting, Silvery Coating

SPOTTED FOR SERVICE

BOSTON, MASS. 119 Braintree St., Allston Station

9 H & D Plants

CLEVELAND, OHIO 1220 Terminal Tower Bldg.

BALTIMORE, MD. N. Hayden and Fairmount Ave.

NEW YORK, N. Y. 2 Lafayette St.

ST. LOUIS, MO. 5110 Penrose St.

KANSAS CITY, KAN. Packer's Station

PHILADELPHIA, PA. 348 Drexel Bldg.

MUNCIE, IND. P. O. Box 357

SANDUSKY, OHIO 800 Decatur St.

Close touch with an adequate and dependable source of supply is a distinct advantage of H & D service provided by nine box making plants in the principal cities of the canning belt. These are conveniently spotted geographically to facilitate prompt and efficient handling of your requirements in corrugated fibre shipping boxes. Telephone or write the plant near you for information or samples and prices.

THE HINDE & DAUCH PAPER COMPANY
800 Decatur St. Sandusky, Ohio

HINDE & DAUCH corrugated fibre SHIPPING BOXES

How much insurance should you carry?

The only safeguard against loss by fire is an amount of fire insurance sufficient to reimburse you for the amount you would lose if your plant should burn today.

Every Canner desires this protection. It can be secured through

CANNERS EXCHANGE SUBSCRIBERS

at

WARNER INTER-INSURANCE BUREAU

where for twenty years the net cost of insurance has averaged $6.00 per thousand less than the ordinary insurance company premiums.

Write or wire for the additional protection you need.

LANSING B. WARNER Incorp.
155 East Superior Street
Chicago, Illinois

LABELS

—as you like them
—when you want them

We are so located that we can take care of all your wants, promptly, dependably.

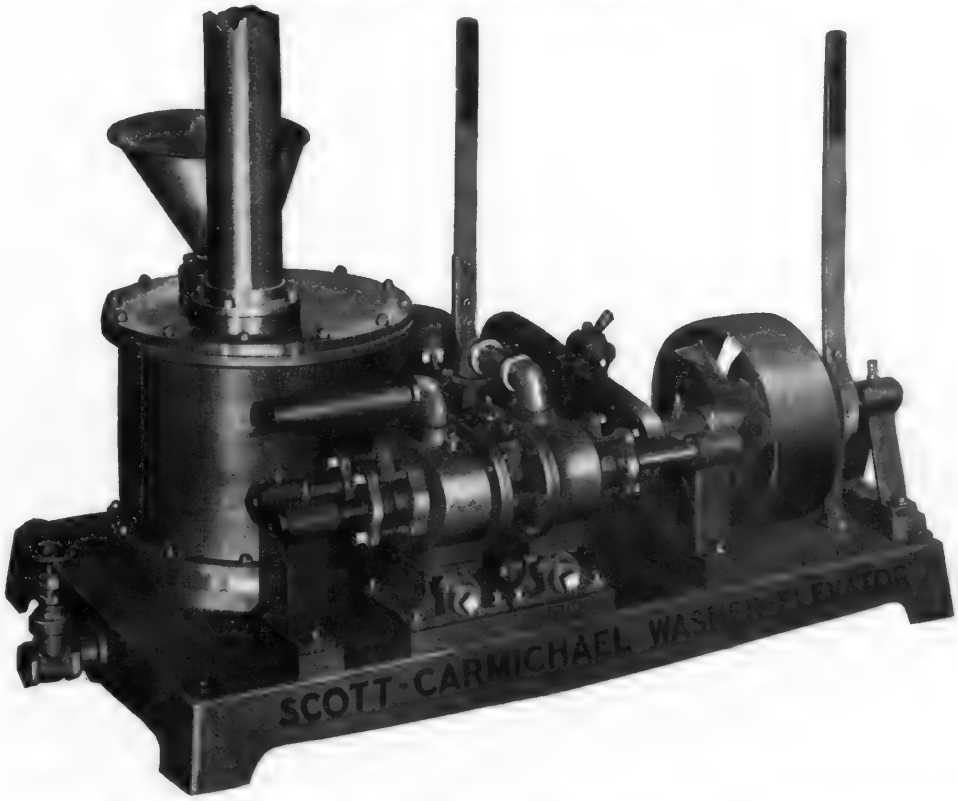
Avoid a rush-job. Give us time and we can give you the better job. But we can take care of the rush job, too.

—Labels of every description
—As many colors as desired
—And at the right prices

Piedmont Label Co., Inc.
Bedford, Va.

The Scott - Carmichael
Washer - Elevator

(U. S. and Foreign Patents Applied For)



A new machine designed to do an old job in a new, better and more economical manner and IT DOES IT. Lower labor costs. Better quality. A dividend paying investment. It washes while it elevates.

SCOTT VINERS

Better Vining
Less Power

TIMKEN BEARING EQUIPPED

Better Vining
Lower Upkeep

SCOTT ORIGINAL STEEL BOTTOM (White Style) FEEDERS.
SCOTT BETTER VINER APRONS. The apron with the built-in extra wear.

MANUFACTURED BY

THE SCOTT VINER COMPANY

773 EAST MARKISON AVENUE, COLUMBUS, OHIO

WHY?

F. O. Mitchell & Bro., with offices at Perryman, Md., are the largest packers of highest quality whole-grain shoepeg corn. They have used ***Tuc*** **Huskers** for five years, husking the most of their corn with ***Tucs*** during the last four years. For several years, they also have used machines of the latest type of single husker of another make alongside of ***Tucs.*** And then, last season they used some machines of the latest type of double husker of another make. *After the 1930 Chicago Convention, they ordered* ***Tuc*** *Huskers for their Kennedyville plant.* ***Why ?***

Stokely Brothers & Company, operating sixteen enormous plants, is one of the largest, if not the largest, packer of vegetables in the world. For five years it has used ***Tuc*** **Huskers,** using them in five plants last season. During the period, it compared ***Tuc*** with every make of husker on the market. *In 1929, it operated side by side, in one plant machines of the latest type of every advertised make of Husker,—****Tuc*** *and all the rest, —and after the 1929 season,* ***it ordered forty-five more Tuc Huskers. Why?***

Iroquois Canning Corp., has its big plant at Onarga, Ill. between Milford, Hoopeston and Bloomington. It is one of the oldest, one of the most conservative, one of the most exacting, and one of the most competent packers of fancy Illinois whole-grain and cream-style Country Gentleman, Golden Bantam and Narrowgrain-Evergreen Corn. In 1929, it replaced *forty* machines of another make with *twenty-five* ***Tucs.*** During the season, it handled over *sixty-three hundred tons* of four different varieties of corn with those machines. It has found it will not need more than the twenty-five ***Tucs*** to handle the tonnage formerly requiring forty huskers, and now states that *if the initial cost of* ***Tuc*** *Husker were* ***double*** *the amount of that of any other type of husker, it would still buy* ***Tuc*** *Huskers.* ***Why?***

WHY?

The Clintonville-Shawano Canning Companies, located at Clintonville and Shawano, Wis. are the largest packers of gallon corn. They have been totally ***Tuc***-equipped for several years, and *to enable the increasing of their pack for 1930, they have ordered more* ***Tuc Huskers. Why?***

And so on and on the list could go.

The people who made these decisions are the *owners* of the successful businesses for which they made the purchases. They are familiar with the conditions of the Industry. They know the requirements essential to the packing of high-grade corn that can be sold at a profit. They are people who do not make reckless expenditures of capital for equipment. Their decisions always are worthy of study.

These men are not gambling on next year's crop of husker experiments. They are from those who would not buy and pay for ***Tucs,*** and buy ***Tucs*** again and again, and pay for ***Tucs*** again and again, unless their expert knowledge and experience had proved to them that in the grim battle confronting them in the canning field, ***Tuc*** is best qualified to help to produce a higher quality of product at a lower cost.

They know the superior features—*exclusive in* ***Tuc Husker,*** and those not exclusive to ***Tuc—but superior in Tuc.*** And they know that the original basic principles and underlying constructions of ***Tuc*** **Husker** have not been changed in five years, and ***why.***

Write for the Booklet ***"Quality Has No Substitute."*** *It tells* ***Why.***

Tuc HUSKER

THE UNITED COMPANY

Continental Trust Building
Baltimore, Maryland

Built and Guaranteed by Fay & Scott

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The Annual Conventions

23rd National Canners—The 42 Canning Machinery and Supplies
The 27th National Food Brokers Associations

THE BIG MACHINERY AND SUPPLIES SHOWS

CHICAGO, JANUARY 20-24th, 1930

National Canners Association

OPENING SESSION

MONDAY MORNING, JAN. 20, 1930
10.30 A. M.

E. B. Cosgrove, Le Sueur, Minnesota, President of the Association, presiding.

THE opening session of the Twenty-Third Annual Convention of the National Canners Association convened at 10.30 o'clock, Mr. E. B. Cosgrove, Le Sueur, Minnesota, President of the Association, presiding.

PRESIDENT COSGROVE: Gentlemen, the invocation will be from Reverend Dr. Timothy Stone.

REVEREND DR. TIMOTHY STONE: I almost feel, Mr. Chairman, as if I were a member of the National Canners Association, as you have been so kind to ask me so many times to open your proceedings. Shall we stand?

Almighty God, we thank Thee that at the opening of this session we may turn to Thee and ask Thy blessing upon us in our lives and in our business and in all the future of this organization. Thou hast been good to us as a nation; Thou hast blessed us in our business; Thou hast blessed us in our friendships; Thou has blessed us in our ambitions and purposes. And, now, we pray Thee that we may pause for a moment ere we go on with the deliberations of this year and ask Thee to guide us and direct us.

Be with all who are facing the responsibilities of life; be with all who are overcome by sorrow or disappointment. Bless all who look forward with ambition and zeal to the work before them, and may we recognize as men the leadership of Thy Divine Presence. Give unto us Thy strength, a character to persevere, the strength to help others, and the purpose to make this world stronger and better by all that we do. Thus, throughout the deliberations of these sessions, may the spirit of good will and friendliness and high and honorable purpose animate and control our motives. We ask it in the Master's Name for His sake. Amen.

PRESIDENT COSGROVE: As you came in the door the Address of the President, the report of the Secretary, and the report of the Auditing Committee was handed to you. We will save your time and patience if you will read those at your leisure. We will not go through those now.

The first business is the announcement of the committees. Under the By-Laws there is a Committee on Business which will consider the address of the President. That is referred to the Resolutions Committee. There is the Auditing Committee. It is customary to refer the Treasurer's report to the Finance Committee and it has been so referred. There is also the Nominating Committee.

COMMITTEE ON NOMINATIONS—1930 CONVENTION
B. C. Nott, Chairman, Grand Rapids, Mich.

California—S. R. Hornstein, Wilmington; R. E. Page, Pomona; E. E. Chase, Sr., San Jose; R. M. Barthold, San Francisco; G. A. Filice, Gilroy.

Delaware—Wm. Richardson, Dover; H. L. Cannon, Bridgeville.

Florida—Paul L. Stanton, Frostproof.

Hawaii—H. E. MacConaughey, San Francisco.

Illinois—E. F. Trego, Hoopeston; Ralph Brown, Rochelle; Louis H. Risser, Milford; James L. Winslow, Rochelle.

Indiana—Bert Powers, Gaston; Roy J. Buffkin, Alexandria; John S. Souder, Greenfield.

Iowa—Sid R. Clift, Ames; L. R. Perry, Forest City; George R. Kelley, Grinnell.

Maine—E. R. Elwell, Portland; Fred C. Black, Thomaston; Fred E. Jewett, Norridgewock.

Maryland—Harry Imwold, Baltimore; D. H. Stevenson, Baltimore; W. Earle Withgott, Easton.

Massachusetts—W. B. Durant, Boston.

Michigan—Frank Gerber, Fremont; W. A. Godfrey, Benton Harbor; E. B. Gill, Central Lake.

Minnesota—A. W. Luff, Arlington; A. F. Wentworth, Fairmont; I. L. Anderson, Dodge Centre.

Missouri—J. A. Killian, Marshfield.

Montana—C. L. Kirk, Bozeman.

New Jersey—F. M. Stevens, Cape May; Lucius E. Hires, Salem; A. C. Dorrance, Camden.

New York—Howard M. Lum, Hilton; D. B. Pierce, Hamburg; George A. Burnham, Newark.

Ohio—Arthur Hamilton, Lebanon; James Stoops, Van Wert; W. W. Wilder, Clyde.

Oregon—W. L. Thompson, Astoria; J. O. Holt, Eugene; C. D. Minton, Forest Grove.

Pennsylvania—E. A. Meyer, Biglerville.

Tennessee—W. B. Stokely, Newport.

Texas—Chas. A. Adam, Houston.

Utah—Gage B. Rodman, Salt Lake City; John R. Pierce, Brigham.

Virginia—Henry B. Taylor, Walkerton; B. R. Ikenberry, Daleville.

Washington—J. C. Richendrfer, Everson; E. B. Deming, Bellingham; Victor H. Elfendahl, Seattle; P. E. Harris, Seattle.

Wisconsin—Fred A. Stare, Columbus; Royal F. Clark, Beaver Dam; Hans C. Sorensen, Gillett; R. A. Greb, Clintonville.

MEMORANDUM TO COMMITTEE ON NOMINATIONS
CHICAGO CONVENTION—1930

Following is a list of officers of the National Canners Association to be nominated for election at the Chicago Convention: President, First Vice-President, Second Vice-President, Secretary, Treasurer.

The following Directors' terms expire at the Chicago Convention and nominations will be made to fill these vacancies: Fred C. Black, Ralph Brown, E. G. Cover, E. B. Deming, A. C. Dorrance, Wm. B. Durant, E. R. Elwell, S. R. Hornstein, B. R. Ikenberry, Harry Imwold, George R. Kelley, C. L. Kirk, Howard Lum, H. E. MacConaughey, *E. P. Nicholson, Bert Powers, L. H. Risser, G. B. Rodman, F. A. Stare, F. M. Stevens, *W. L. Thompson.

* Elected for two years to fill out an unexpired term, and eligible under the By-Laws to be elected for one more year.

PRESIDENT COSGROVE: I think there is one branch of distribution of which we are all conscious. I believe we are all aware of the fact that there is a chain store method of distributing merchandise in the United States. It was my pleasure to attend the convention of the Chain Store Association this summer and it was a marvelous convention and revelation to me.

We have with us today Mr. W. H. Albers who is President of the National Chain Store Association. Mr. Albers. (Applause.)

Chain Stores—A Blessing to the Canners

By W. H. Albers, *President*
National Chain Store Association

THE day the first grocery chain store started in business was the birthday of a new era for the canner. In order to understand the chain store in its relation to the canner, it is important that we keep in perspective the history of distribution as it has developed.

It is necessary also to keep in mind that the chain store is the child of economic destiny. From the age of barter to our own "wonder-age," commercial enterprise has written a story of everlasting change and improvement. The coin came along early to replace the stick, the stone, wampum and the token. Oxen yielded to tractors, horses to automobiles, camels to motor caravans, wind-blown argosies to steam, oil and electricity, the hands and backs of men to the releasing power of man-controlled machines.

My father opened his grocery store in 1882, and his generation and mine have seen many changes in both the methods and mechanics of distribution. First the itinerant peddler was eagerly welcomed to the sparsely settled hamlets that dotted the American country-side. Soon his intrusion was resented by the small retailers who were springing up to provide in a better way for local needs. The local store became, and up to about 1870 continued to be, the dominant voice in retailing.

This was a day when goods were sold without names and the canner's trade mark was practically unknown. The one price method of retailing was yet unborn and both the producer and consumer were subject to the whims of the retailer. Then came the last thirty years of the 19th century, which saw the development of the "Canner to wholesaler to retailer to consumer" system of distribution under which the wholesaler rose to rapid dominance. Through him the retailer was loaded with as much merchandise as high pressure salesmanship could sell him. It was not unusual for a merchant to have goods on his hands representing his needs for a whole year ahead.

THE COMING OF THE BRAND

The canner inevitably struggled to escape this wholesaler domination and to acquire some practical contact with the consumer. Out of the pressure of these general circumstances came packaged and trade marked merchandise. Through the widespread use of advertising, the time arrived when the progressive canner was largely to free himself from wholesaler domination and to stamp his name, and the merits of his product, upon the consumer consciousness.

Thus, at the beginning of the 20th century, we observe that the commanding power in retailing, which had rested successively in the hands of the small merchant and the wholesaler, had passed into the hands of the canner. Now, with the rapid development of the Chain Store, it has been suggested that a new cycle is about to begin, with chain store retailing as the dominant influence. Some are alarmed at this suggestion and predict dire calamities.

Some are alarmed at the sale of private brand merchandise by the chain stores, lest it suggest a return to the demoralized conditions of fifty years ago in which no manufacturer had any assurance of his market. Others are alarmed at the tremendous area of the retail market controlled by the single chain and see in this the menace that they may be arbitrarily cut off from these areas by the undisciplined use of chain store power. Many are the abuses and dangers which are charged to this new retailing mechanism.

WHAT IS THE PUBLIC INTEREST?

In all of this I am impressed by the fact that the canner is concerned with the future of canning, that the wholesaler is concerned with the future of wholesaling, that the individual retailer is concerned about the survival of his individual business. Seldom through the length and breadth of this entire controversy has there seemed to be a sincere approach to this problem upon the basis of "What is to the public interest?"

The survival of one form or another of manufacturing is relatively unimportant. Whether the wholesaling function should survive in isolated and distinguishable form is relatively insignificant. Whether the units of retailing in a given community shall be small or large cannot possibly be a serious question in itself.

The final and inescapable problem is: What instrumentalities and what methods are calculated to best serve the consuming public?

All of us recognize that wasteful methods of distribution are annually exacting from this nation a toll of billions of dollars.

THE DOLLAR'S LAST STAND

The largest remaining area in which the value of the dollar may be increased is in the field of reducing the costs of distribution. This should be done by eliminating waste and inefficiency. Chain Stores are dedicated to the accomplishment of this purpose. They believe that every dollar saved by scientific management is just so much added wealth of our American people.

In a very wide area of distribution the chain store is the only precision instrument so far developed. The chain store has thus made an important place for itself by reason of its contribution to precision in selling and consequent elimination of waste. It is almost the first retailing instrumentality that has devoted itself with a single eye to the purpose of getting merchandise into the hands of the consumer at progressively lower prices.

THE CANNER'S DIRECT BENEFITS FROM CHAIN STORES

The chain store merchant knows that he has been of great help to the canning industry in that he performs five functions of value to the canner which are not performed with equal efficiency or to equal extent by any other distributing mechanism:

1. CHAIN STORES HAVE EDUCATED CONSUMERS TO BUY HIGHER QUALITY CANNED GOODS

By extensive and continuous advertising in newspapers and by window and counter displays and sales campaigns chain stores have performed an outstanding accomplishment in the education of a thousand many consumers to know that the better value for price is in the choice qualities of canned goods. The basis for my assertion is in the records of the Kroger Grocery and Baking Company which I believe can be accepted as the experience of the other leading grocery chains.

The records of your industry will show that the sale of choice quality canned peaches in the years of 1928 and 1929 was less than two and a half times the sale in the year 1920. Kroger Stores sold five times as many cans per store. We have further satisfaction in having for the first time placed this fine fruit on the tables of millions of the working class.

Our sales per store on fancy quality corn have doubled over the same period and this is approximately thirty per cent better than the records of the corn canning group.

2. HAVE HELPED TO SOLVE THE PROBLEM OF EXCESSIVE PACKS

The featuring in newspaper advertisements of canned fruits and vegetables in the years of excessive packs has attracted consumer attention as could not have been done in any other way, and the millions of tins of added consumption have relieved that pressure of bank loans of the final losing prices that canners were forced to accept in former years.

Chains also help much by giving their customers the immediate benefit of lower costs. Why do national advertisers of foods have to spend thousands of dollars in newspapers telling the consumer that they have lowered their prices? Why did, on last Friday, the president of a large national food distributing company complain of retailers not passing reduced prices to the consumers even when chains featured the lower prices in their advertisements? How much more would the public pay—if the chain did not render so much help to canner and food distributor?

3. THE SCIENCE OF TURNOVER

The science of turnover as developed by chain stores has reacted to the benefit of canners and consumers in the many ways that the members of your industry know without my going into much detail, but the chain store policy of "from truck to store shelf" prevents the tremendous losses caused by storing of cases of canned goods—in basements, often damp and insanitary, and damage through rust and swells. Chain stores have saved hundreds of thousands of dollars to your industry in this way—to say nothing of preventing dangerous results from contents of soiled tins.

4. CHAIN STORE SAVINGS TO CONSUMER

The economic advantages of chain stores are entirely passed on to consumer and these (many) millions of dollars on a minimum saving of 10 per cent has benefited the canners tremendously. Statistics show the housewife, the best buyer in all the world, spends her weekly food cost for what will be the best values and the chain store savings are responsible for a much larger portion being canned goods than she would be buying otherwise.

5. A READY MADE MARKET

First, to the extent of its number of stores, and the number of customers of those stores, the chain store presents to the can-

ner a ready-made market for his merchandise. The availability of such a market obviates the necessity for extensive promotional and market development expenditures.

Second, the chain stores sustain this market for the canner and thereby save him the expense of constant activities calculated to sustain this market.

Believing this, it is not surprising that the chain store merchant would expect a price benefit equivalent to the savings represented by these services. The canners, on the other hand, are convinced in the main that they cannot make such a distinction, for a number of reasons:

First, it is difficult for him to measure the exact value thus represented.

Second, he fears that if this saving is passed on to the chain store, the chain store in turn will reduce its retail price and thereby disorganize the competitive distributing situation which the canner must also consider.

Inevitably there are many angles of this subject which are difficult to solve intelligently. Nevertheless, there are certain fundamentals from which none of us can escape.

First, among these, you may be sure, is the fact that the chain store will always fight for the right to sell to the ultimate consumer at the lowest possible price consistent with a fair profit.

Second, that a system of individual retailing in which nine out of ten individual merchants fail in each decade is unhealthy and wasteful.

Third, that the costs of doing business with chain stores on a cash basis without any credit losses, and with other advantages, must be clearly distinguished from the costs of doing business through channels of high mortality and great risk.

Fourth, in the final analysis, the chains must be able to secure and distribute merchandise without including therein any of the costs resulting from waste generated in other distributive channels.

REDUCING SHIPPING UNIT SIZES

The canners can do much to assist in more economic distribution of canned goods in warehouse repacking and delivery charges by reducing the shipping unit sizes of certain articles, particularly by establishing a twenty-four tin unit on the eight ounce, eleven ounce and fifteen ounce tin of fruit, vegetables, fish and soups, and a twelve ounce unit on the slower selling, higher priced items such as tuna fish, crab meat, lobster, corned beef, etc. Some of these are now packed in ninety-six and seventy-two and the others in forty-eight tin units.

I could continue with many illustrations of the application of science to chain store retailing, without serving any additional purpose. My one desire in this connection is to emphasize the existence of the principle which I have outlined and to dissipate the silly notion that chain stores are inevitably pernicious and disorganizing in their influence.

The chain store is fundamentally opposed to any acts of competition that are not fair and above board. Chain stores could not have achieved the degree of success which is theirs if the men directing them were interested in trickery rather than in substantial achievement. You will find, in any business that attains a position of importance, that stability and reputation are valued more than temporary profits. The chain stores are not an exception to this rule.

THE SOUNDNESS OF THE CHAIN

In closing, let me point out that some measure of the soundness of the chain store and the greatness of its future may be gleaned from statistics which are pertinent at this moment. Because all of us are interested in fundamental industrial conditions just now, it is important to know that at a time when iron and steel production show signs of slowing up, when railway earnings for the first time this year show a decline, when the value of engineering and building contracts is now twenty-five per cent less than in the same period last year, when motor car production is at a very low ebb, when general commodity prices are on the decline, the chain store business last month shows a twenty per cent increase over December a year ago.

Out of generations of unorganized, unscientific and wasteful retailing, the chain store has emerged as one answer to the imperative demands for elimination of the colossal burdens which waste and inefficiency have heretofore placed upon the ultimate consumer.

Only as we realize the inevitability of changing conditions can we hope to fully understand the new and modern relationships which are confronting the chain store and the canner. Neither the chain store nor the canner can reasonably hope to escape the surge of scientific and economic tides which are sweeping the commercial and industrial world.

Chain stores will grow better in every way. 1929 sales will be the largest in history. Consumers who have never dealt at chain stores are being added every day because of their desire to know why there is so much talk, so much advertising, good and bad, right and wrong, fair and unfair on chain stores, but all helping just the same.

PRESIDENT COSGROVE: Gentlemen, I think we all recognize that distribution is the major problem of the canning industry. We very much appreciate Mr. Albers being with us and giving us the chain store side of the distribution problem. Mr. Albers has recommended a change in the unit size or the size of the package for distribution of some of the slower moving items, and that matter, Mr. Albers, will be referred to the Conference Committee during the week.

We regret that Mr. McLaurin, an old friend of the National Canners Association and well-known to many of you men, found it impossible to be with us at this convention.

GORDON H. KELLOGG

On my right sits a man whom I think you all know pretty well. He has talked to the canners and danced with the canners and entertained the canners and needs very little introduction. Gordon H. Kellogg, President of the Canning Machinery and Supplies Association. (Applause.)

GREETINGS FROM THE SUPPLYMEN

By GORDON H. KELLOGG, *President*
Canning Machinery and Supplies Association

I AM greatly honored, as President of the Machinery and Supplies Association, in being asked to address you upon the occasion of your opening session.

I might this morning, in behalf of the membership of the Association which I represent, congratulate you upon the success which has attended your efforts in the canning business during the year just past. I might even go back further into the past and contrast the "cut and try" methods prevalent in the canning industry 24 years ago, when I first began to learn about canning from you, with the scientific exactitude which actuates the art today. With perhaps almost equal fitness I might point out how the membership of your Association and mine have gone hand in hand over the blind trails of trial and travail that have led from the darkness of ignorance into the light of understanding in the production of canned foods. I might with becoming modesty admit how dependent the membership of our Association is upon yours, and with certain agreement on your part could intimate how much your success has been dependent upon us, our seeds, our snippers, our viners, our huskers, our fillers, our retorts, gauges, our labels and labelers, our closing machines and our cans. But as old friends—and we are—we need not elaborate upon our friendship nor upon our interdependence upon one another. Our individual congratulations you have already had or will receive as we meet each other this week face to face.

I would, however, suggest one thought to you as your Convention opens, a thought so familiar as to be almost trite and threadbare, a word so common to daily thought and talk as to be almost devoid of meaning. I bespeak your confidence.

Confidence that will be unshakable in the face of depressing influences. Confidence that will be unwavering because it is founded on truth. Confidence in your industry, its present and its future. Confidence in each other and your association. Confidence in the America of today, of this year, and of the years to come. In such confidence lies your hope for prosperity in this year of 1930.

American business since last August has and still is a trifle groggy from the effect of over-indulgence in stimulants. Too much of letting down the bars, not enough of hanging on. Too much money which was not earned. Not enough of sweat and hard work. Too much leisure in which to play and spend. Not enough time to think and plan. Too many partial payments for the future. Not enough saving from the present. But that's all over now. We haven't taken the pledge because we believe in personal liberty. We aren't broke and we're not ruined, because we had too many resources to start with and we didn't go the limit. But we've rather lost confidence temporarily, and we need to regain it. After all we're terribly young and full of life, and youth that amounts to anything has always had to learn from experience and not from advice.

Today is the morning after the night before and what we need is to wake up, throw back the covers, get out of bed, stand up on our feet, take a cold shower, drink a little of the stimulating black coffee that Mr. Hoover has prepared in his conferences on business and finance during the last month or two and then get down to work with confidence that "God's in His Heaven and all's right with the world." It's up to us—each of us—not the other fellow—whether we're out of the woods by mid-summer or whether we're still faltering and fumbling in a fog after the first frost this fall.

Let's make up our individual minds that the canning business—the business of preserving and conserving food—is an honorable business, a growing business, and in our complex modern life a necessary and essential business—as such less subject to contraction in times of temporary depression than almost any other.

Let's sit a little tighter—think a little longer—work a little harder. Let's pack a little better quality from better seed, planted and grown with more exact knowledge, so that we may have greater confidence in our pack, and having this confidence we may more confidently ask a fair price for our product. In so doing we will build up greater confidence in the mind of the buyer—continuing confidence on the part of the consumer—to the end that with "Truth on the label and quality in the can," at the end of the year 1930 we may look forward with confidence to still greater prosperity.

It is with this New Year's wish and with this simple thought that I bid you God Speed, as your convention opens.

PRESIDENT COSGROVE: Mr. Berthiaume, who is President of the National Association of Retail Grocers, we will hear from this morning. (Applause.)

Greetings From the National Retailers

By Eugene S. Berthiaume

President, National Association of Retail Grocers.

THERE are in the United States 73,000 establishments engaged in the manufacture of food products, with an output valued at $15,512,206,000. In addition, the volume of non-manufactured foods, such as milk, eggs, fresh fruits, vegetables, fresh fish and the like, reaches a staggering figure. An important item in food product is bread. The sum total spent for this most important article in our daily diet represents in the neighborhood of $1,600,000,000 yearly. Half the struggle of life is a struggle for food, which phrase can be converted into meaning that one-half of our income is necessary in order to satisfy our appetites.

The business outlook is "clearing." Steel operations are holding steady, building operations are not sagging further, coal production is running high, goods are moving by railroad by larger volume than last year, agricultural marketings are normal. Owing to the recent market upheaval, some lines of trade will necessarily slacken for a while, but business in general will gradually and steadily recover as business men regain their perspective and go back to work.

"There is hardly anything in this world that some men cannot make a little worse and sell a little cheaper, and the people who consider price are this man's prey.

"The winner of the race for the favor of the consumer will be that distributor whose eye is fixed not so much on what his rivals are doing as upon what he himself is or is not doing to insure his own survival and success.

"Quality and price always go hand in hand.

"Quality determines the price, and price reflects the quality.

"Cut the price—and usually the quality must be cut to correspond.

"The laws of merchandising are fixed—everything has its proper place, and time, even the payments."

This reminds me of a story.

A visiting relative once asked: "When was the baby born?"

The modern father replied: "Between the second payment on the radio and the tenth on the car."

"What do I think is wrong with the service grocery store?" There is nothing wrong with the grocery business, and only the men in it are wrong. It's not the plan, it is the man.

The war forced the competition that most of you are bothered with. When the Government asked us to eliminate all unnecessary labor we did not solicit any more, and we lost a direct contact with our customers, and thus the chain was born; that is, on the scale it is today.

Some of you gentlemen might think it is a problem, and you will probably see somethings perhaps in a different light from what I did. The first thing we did with our store I am going to tell you.

Last week I took 100 good values in canned foods and put 200 cases of canned foods upon our floor, and put beautiful banners in our windows and marked every display with a neat card stating the prices per dozen and in six-can lots. I know this will sell one thousand cases or more for us; our customers have been looking and asking when Canned Foods Week was coming. The advertising that you gentlemen put on some two years ago is still in the mind of the housewife, and I urge you, gentlemen, to again consider continuing another program of National Canned Food Week campaigns. I believe that one week is too short. I would suggest a month sale, just as we are putting over in our store. Think this over, please.

"Hold that line! Hold that line!" How often we heard these words this last fall, and we must "hold that line," because canned foods are the fullbacks that have to score for the retailer, and without canned foods the grocer could not exist and stay in business. This department is never in the red on our reports, because we look to this department to make the profits.

"Doing business without advertising is like winking at a girl in the dark. You know what you're doing, but nobody else does."

Lack of profit in retail stores too often is attributed to the fact that operating and overhead expenses are too high, or to the fact that the grocer is paying too much for the commodities he is selling. It is true, of course, that he could increase his profits by reducing his operating expenses, or by buying his stocks at more favorable prices, but often he is unable to do either. What, then, can he do to put his business on a better paying basis?

The best solution is to set about immediately to attract more trade, so that he can spread those expenses over a greater sales volume.

President Hoover said in a recent address: "The foundation of American business is the independent business man. We must maintain his opportunity and his individual service."

It is a time for clear, level-headed thinking on the part of every man in business. The general prosperity of our country will always be shared by the individual who refuses to be swept off his feet, who thinks for himself and who puts his house in order to best take advantage of the opportunities presented to him.

The grocery business today is changing rapidly.

Old methods are being discarded—not because they are old, but because better ways have been found to do things.

One of the biggest changes is in methods of selling goods.

Today the most progressive and successful grocers are giving more careful though to store arrangement. They are putting their merchandise out where more customers will see it and be reminded to buy—where the goods can literally sell themselves, bringing bigger returns without added selling expense.

This calls for one thing, however. It calls for recognized, established brands, brands that women know and prefer. Brands that they accept as standing for assured quality.

In the canned fruit and vegetable field quality foods are the grocer's logical choice to meet today's requirements.

The Graf Zeppelin circled the world in 21 days, moving pictures began to talk, the Athletics won the World Series, the bulls and bears put on a battle royal in Wall Street, Notre Dame finished the season with a clean football slate.

The most important asset a pugilist owns is his ability to "take it," to stand the gaff. And the same thing applies to retail grocers, for they too must take a lot of punishment and come back for more, and win.

The big stumbling block in the grocery trade today is that they have forgotten the old adage, that quality will be remembered when price is forgotten.

It costs money to produce quality in merchandise, but when you produce quality you give real value.

Sell goods of quality, and you will surround yourself with a trade you can be proud of and that will be worth more to you than the trade from double the number of fly-by-night bargain hunters.

"Know the goods you are selling. Know every article in your stock and know all about it. Know its comparative and actual quality. People like to buy from a man who knows what he is selling.

"It is so difficult to draw some into conversation about the goods they are selling that one feels there almost should have been an introduction before speaking to them at all.

"The successful salesman never loses his temper, no matter how hard he may be assailed by cranky customers. A soft answer not only turns away wrath, but it also holds the trade.

"Successful salesmanship is based upon an intimate knowledge of human nature. Study the customers. Get acquainted with their individual characteristics and humor their fancies.

"Much of a salesman's success in handling his trade lies in the way in which he takes care of the inquiries for goods that are out of stock. Any man can sell an article on an absolute inquiry, but it takes a good man to satisfy the customer who calls for something not in stock."

If we are to increase our volume of business on the canned foods and vegetables which must compete with the refrigerator, it must be done on a quality basis, not a price basis.

Will we familiarize ourselves most fully with canned foods grades; offer the best of them to our consumers at good prices; view canned foods as the safest, most wholesome foods in our store; display them and talk about their merits, and stress quality, always quality—price is only relative, and price appeal of secondary importance.

"How much are your fish, Mr. Goldstein?" asked Mrs. O'Brien.

"Eight cents a pound," said Mr. Goldstein.

"I'll take two of them. How much will they be?"

"Let's see. Eight pounds—eight times eight are eighty-four. Take them for seventy-five cents, Mrs. O'Brien."

"Thank ye, I'll do that. Ye're always good to this Irish, I'll say that for ye."

There are five rules that should guide buying by the retailer: One, know what your community wants. Two, study the offerings of competitors. Three, co-operate with suppliers in plans for winning trade. Four, discount your bills. Five, keep a stock record.

Machinery works for you; steam and electricity work for you; even animals and plants work for you.

But no man has ever discovered or invented anything that can work with you except another man.

To be able to co-operate is a privilege given to mankind only. Let us take advantage of this privilege. Let us work in harmony for each other's increased prosperity. It is the gift which civilization gave to human beings, the ability to work with each other toward a common goal.

As we look back over the year 1929 we are moved to a deeper appreciation of our friends. Each year we realize more fully that friendship and good fellowship are the main things in life, and it is a pleasure to know that both have existed to such a great extent in our business relationship during the year 1929, and we hope to see it continue in the future indefinitely. At this particular time we want to express ourselves as best we can to that effect. We wish you all a prosperous New Year.

MR. BERTHIAUME: I want to tell you, ladies and gentlemen, that we appreciate the canned food people of the United States. In our own store if it were not for canned fruits and vegetables, we could not stay in business. As I picture the retail grocery business today, on the left-hand side of the map are the articles sold below cost and fresh fruit and vegetables are on this side, and that is where we get our bread and butter. A lot of grocers in the United States do not agree with me, but in our own s[illegible] we figure that half of our volume, or at least forty per c[illegible], is done below cost. The greater part of the sales consists of tea and coffee, sugar and lard, butter and flour, eggs and milk, and that is nearly forty per cent of the retail grocery business. If we did not have canned foods and fresh fruit we would have to get out of business. We want to thank you for canning foods on which we can make a living profit in order to stay in business. I thank you. (Applause.)

PRESIDENT COSGROVE: I think, gentlemen, we agree with Mr. Berthiaume. We very much appreciate that talk.

The next gentleman on the program is the man at the end of the row, who is well-known to some of you, Willis W. Johnson, President of the National Food Brokers Association. (Applause.)

THE BROKERS' GREETINGS

By WILLIS W. JOHNSON, *President National Food Brokers Association*

ANOTHER pack has passed, and in checking up we find very few weak sisters in any variety of canned foods. This means a firm market for canned foods. Before your new pack comes on, we may see a bare market with a few exceptions. A condition like this makes you canners happy and also us brokers. By coming to this convention, each year, you show your progressiveness, and that is why you are putting up each year better products. Think back a few years and it makes you smile to remember the old can and the dull looking and unattractive label. Look at the retail grocery stores of today; they are things of beauty with their attractive shelves of canned foods, colorful, strikingly labeled, appealing not only to the appetite but to the sense of beauty; what is more pleasing to the eye than a window with canned foods on display in an artistic arrangement.

WILLIS W. JOHNSON
Retiring President, National Brokers Association.

We all know that canned foods packed right are superior to the fresh products and the housewife is beginning to realize it. It has taken judicious advertising and years of carefully giving her service and satisfaction, but canned foods are just starting into consumption and in a few years if you keep up your quality, you will need to pack twice as many cans as you are doing now. Increased canning means much to our farmers, and more prosperity for them will benefit the entire population of the United States.

The broker will look after your distribution troubles for you. Your aim is to reduce your distribution costs, and in this he can help you. He knows conditions pertaining to his market and is also posted on what competitors are doing. Why shouldn't he be? That's his business and he knows where to get authentic information in his territory. He always serves you gladly and efficiently and he realizes that distribution is a vital factor with you.

While on this subject of distribution let me mention one bad practice which is creeping into business, that of secret rebates. I want to take a few minutes of your time while speaking on distribution and read you a paragraph from a letter written by one of the prominent packers of evaporated fruit to his broker in a big market. This explains better than I can the danger of this insidious method.

"The method of secret rebates in the form of brokerage to direct buyers is only the starting point of an evil which is not only threatening the brokerage fraternity but the manufacturer with dire potentialities. Certain merchandising organizations with large buying power who buy from manufacturers, having obtained the so-called 'right' of receiving brokerage, which is really a concession of price and not a payment for services rendered, are endeavoring to go a step further and, in some instances, have succeeded. With specific reference to the dried

fruit industry, these further concession demands are the insistence that the buyer will, first, name the price at which he will buy the commodity in question and, second, the terms under which he will buy. The first abuse, in specific instances, has been carried to the point where the manufacturer was controlled by the buyer; the second has broken down the trade practices which it has taken the dried fruit industry over twenty years to establish. This second development is only about a year and a half old, but indicates to the far-seeing manufacturer just what is in store for him unless there is some curtailment of the present practice of allowing secret rebates in one form or another to such buyers. Buyers who obtain such secret rebates which are given under guise of brokerage, advertising allowance, etc., are, to the writer, one of the most serious problems with which the fruit industry is now faced and against which your association has been making a determined fight, the point being that the amount of brokerage allowed, and the amount of advertising and other allowances demanded are increasing with each season to the point where we as manufacturers prefer not to bid for certain types of business."

You must admit that this dried fruit packer is far-sighted and don't you think he is right? Can't you realize that giving brokerage on a sale might not be such a terrible sin in itself, but it is the entering wedge for grosser evils and really the beginning of the end—if such practices should continue.

You and the brokers have worked along years together and both of us have prospered. Let's keep things harmonious, and not get ourselves in a jam by grabbing at bait put out by some buyers—that kind of buyer must be resold on every sale. Price is what counts with most of them. Now is the time for the canner and manufacturer to run his own business. Some of us get panicky at times, but let's not rock the boat.

I feel that we of the food industry have nothing to fear in regard to sales in 1930. We can take for granted that there will be employment for all, and this means a big consumption of food.

The National Food Brokers Association hopes that in 1930 the sun will shine when you want sunshine and that rain will fall when your crops need it.

PRESIDENT COSGROVE: Is the Chairman of the Nominating Committee present? (Present.)

THE National Canners Association, at its twenty-third Annual Convention, in Chicago, Monday morning, January 20, 1930, elected the following officers and directors to serve during 1930:

OFFICERS

President—C. E. Hume, G. W. Hume Company, San Francisco, Calif.

First Vice-President—F. A. Harding, Wm. Underwood Company, Watertown, Mass.

Second Vice-President—Leonard E. Wood, California Packing Corporation, San Francisco, Calif.

Secretary-Treasurer—Frank E. Gorrell, Washington, D. C.

DIRECTORS

H. J. Barnes, Kaysville Canning Corporation, Kaysville, Utah.

James E. Dole, Hawaiian Pineapple Company, Honolulu, Hawaii.

Victor Friend, Friend Brothers, Melrose, Mass.

G. Sherwin Haxton, Haxton Canning Company, Oakfield, N. Y.

T. C. Hayes, American Packing Corporation, Evansville, Ind.

Bismarck Houssels, Van Camp Sea Food Company, Terminal Island, Calif.

Fred E. Jewett, G. S. and F. E. Jewett, Norrigwock, Maine.

H. A. Malsbuy, Bozeman Canning Company, Boseman, Mont.

C. K. McMillan, W. R. Pride & Co., Bellingham, Wash.

Charles E. Morrill, Burnham & Morrill Company, Portland, Maine.

E. P. Nicholson, Stokely Brothers Company, Milton, Del.

Guy E. Pollock, Marshall Canning Company, Marshalltown, Iowa.

E. Pritchard, E. Pritchard, Inc., Bridgeton, N. J.

Newlin B. Watson, Watson & Son, Greenwich, N. J.

Henry Soutau, Hussa Canning and Pickling Company, Bangor, Wis.

D. H. Stevenson, Torsch-Summers Company, Baltimore, Md.

Charles P. Taylor, California Packing Corporation, Chicago, Illinois.

Henry P. Taylor, Taylor & Caldwell, Walkerton, Va.

W. L. Thompson, Columbia River Packers Association, Astoria, Oregon.

Walter Trego, Hoopeston Canning Company, Hoopeston, Ill.

W. Earle Withgott, Talbott Packing and Preserving Company, Easton, Md.

Members of the Board of Directors whose term of office did not expire and who hold over the coming year are:

Robert M. Barthold, California Packing Corporation, San Francisco, Calif.

John L. Baxter, H. C. Baxter & Bro., Brunswick, Me.

G. H. Bradt, Hunt Bros. Packing Company, San Francisco, California.

Walter Hy Brown, Cutler-Lobingier Packing Company, Ontario, Calif.

H. W. Cleveland, Quaker Maid Company, Inc., Brockport, New York.

C. O. Dawson, Blair Canning Company, Blair, Neb.

H. K. Defendorf, Kauai Fruit and Land Company, Ltd., San Francisco, Calif.

L. B. Douthitt, Faribault Canning Company, Faribault, Minn.

Victor R. Elfendahl, Alaska Pacific Salmon Corporation, Seattle, Wash.

H. C. Frost, Starr Fruit Products Company, Portland, Ore.

J. D. Fuller, Fuller Canneries Company, South Dayton, New York.

D. H. Gates, Banning Canning Company, Banning, Calif.

W. P. Hartman, W. R. Roach & Co., Grand Rapids, Mich.

M. C. Hutchinson, Michigan Fruit Canners, Inc., Fennville, Michigan.

Edw. W. Jacobs, Edw. W. Jacobs, Inc., West Chester, Penn.

J. A. Killian, Killian Canning Company, Marshfield, Mo.

M. E. Knouse, Knouse Corporation, Peach Glen, Penn.

John P. Kraemer, Mammoth Spring Canning Company, Templeton, Wisc.

Philip Larmon, Libby, McNeill & Libby, Chicago, Ill.

H. J. McDonald, Elyria Canning Company, Elyria, Ohio.

Emil R. Mayer, Kuner-Empson Company, Brighton, Colo.

F. O. Mitchell, F. O. Mitchell & Bro., Perryman, Md.

E. J. Morehouse, Olympia Canning Company, Olympia, Wash.

H. D. Olson, Wm. Craig Canning Company, Ogden, Utah.

Howard A. Orr, Winorr Canning Company, Circleville, Ohio.

W. J. Parker, Utah Fish Canning Company, Ogden, Utah.

R. J. Peacock, Sea Coast Canning Company, Lubec, Me.

Carl Scudder, John S. Mitchell, Inc., Windfall, Ind.

H. C. Sorenson, Gillett Canning Company, Gillett, Wisc.

Wm. B. Stokely, Jr., Stokely Bros. & Co., Louisville, Ky.

Clarence L. Turmail, Vallonia Canning Company, Vallonia, Indiana.

Marcus L. Urann, Ocean Spray Preserving Company, South Hanson, Mass.

Fred J. Wackerbarth, Independence Canning Corporation, Independence, Iowa.

F. A. Wilder, Pratt-Lowell Preserving Company, Santa Clara, California.

J. W. Wood, Dodds Canning Company, Lebanon, Ohio.

PRESIDENT COSGROVE: Are there any further nominations?

MR. C. D. MINTON (Forest Grove, Oregon): I move the adoption of the report and that the Chairman cast the ballot for these nominees.

The motion was seconded.

PRESIDENT COSGROVE: Is there any discussion on that motion?

The motion was put to a vote and carried.

PRESIDENT COSGROVE: The officers are elected.

At this time I want to call your attention to the afternoon session at two o'clock in this room. We believe we have an intensely interesting program. We hope you will all be here and on time.

The meeting adjourned at eleven-fifteen o'clock.

ADDRESS OF PRESIDENT E. B. COSGROVE

National Canners Association

IT takes perspective to give things their right proportion. The historian has the advantage of perspective in valuing events. Our "hindsight is always better than our foresight" is a homely expression. The historian has the everlasting advantage of hindsight. You and I must estimate the effect of current events and use foresight in planning our today's and tomorrow's work. We can't wait for history to be written or the future to unfold. Business problems are present and immediate things.

At this time last year, none of us could possibly have foreseen all that the past year has brought us. When the year opened we had our minds turned toward the proposed strengthening of the food law so as to require more informative labeling. We knew that farm relief and tariff legislation were in prospect. That the labeling legislation would fail at the last moment at the regular session of Congress through the objection of a single

member of the Senate, was as unexpected as it was disheartening. That the special session of Congress would end with the tariff bill still under debate was not anticipated; nor was it thought that farm relief legislation would bring with it new problems for the industry. And no one would have had the temerity to predict such an unprecedented stock market crash as came in October.

Right now we are too close to these events accurately to measure their effects. The industry as a whole, and canners as individuals, must go on, however; and the big job, as I see it, is to keep our feet, size up the situation as best we can, and then go about our business with whatever measure of ability Providence has vouchsafed to us.

When, at the request of President Hoover, the National Business Survey Conference was called in December, our Association was asked to present, for the information of the conference, a statement as to the current situation in the canning industry and as to the prospects for the first half of the new year. Through the co-operation of State canners associations, the National Association developed the facts as interpreted by canners in all branches of the industry in all parts of the country. There was general agreement that the situation at the time was generally satisfactory, and that the prospects for the first half of 1930 were as good as, or better than, for the corresponding period of 1929. Virtually every report contained this note of warning: "Overproduction in 1930 must be guarded against." Everyone in the industtry, and everyone really familiar with the industry and its history, knows that it has a productive capacity in excess of its ordinary output. Everyone knows that from time to time various branches of the industry have produced more goods than the market could absorb. The canning industry must avoid its error of the past. It must not allow a satisfactory present situation to lead to a disorganized and unprofitable future through overproduction.

It is not within the province of the National Canners Association to attempt control of production—it has never attempted such control and will never attempt it so long as the present wise policies of the Association are followed. At the same time, the Association would fall far short of its duty to the industry and to the consumers of its products, should it fail to urge upon its members an intelligent conduct of their individual businesses. It is not the function of the Association to dictate to its members, to set itself up as a supergoverning body. Instead, its purpose is to inform its members, to give them, so far as available, the facts upon which they can exercise their own initiative and do what their judgment tells them is best to do. If the individual canner does not have the ability to guide his business intelligently, or does not choose to use his intelligence, no organization of men in the business can save him.

For several years following post-war deflation, the canning industry did not appeal to promoters or to others as a profitable field for investment. Later, when the industry was getting on its feet, the Association began to receive from local chambers of commerce and from individuals, inquiries as to the promotion and financing of canning plants. Many, if not most, of these inquiries completely disregarded the chief problem with which the industry has had to deal in recent years. Our big problem, as you so well know, is to sell what we can produce, and along with that to adjust our output more accurately to market requirements. Overproduction and consequent distress selling are disastrous, and although purchases at distress prices may mean a temporary saving to the consumer, in the long run the consumer loses.

Industry wants blind chance-taking and gambling eliminated from business; and the canning industry would be unfair to itself, as well as to others, if it failed to make plain to those who would enter the industry, every consideration that would enable such persons to arrive at a wise decision. The canning industry is naturally and rightly solicitous for the investment it has at stake, and that investment can as easily be jeopardized by unwise promotion of new canneries as by unwise expansion of existing production.

One of the most reassuring features of the present situation is the fact that, while security values have crashed, there has been no parallel decline in commodity prices. Industry as a whole is sound today because inventories of immediately consumable goods are reasonably low and are owned at soundly low costs. Our industry, through the use of a little stalwart horse-sense in the immediate future, can profitably merchandise existing unsold stocks. Nothing could be more foolhardy than to sacrifice goods in existence, at the same time looking forward hopefully to increased production for 1930 at a satisfactory profit. Basic conditions in both production and distribution are such that industry and trade can with assurance go ahead with their plans. Neither Pollyanna optimism nor long-faced pessimism should have a place in the picture for the year to come.

I do not wish to present a recital of the Association's work of the past year, nor to lay out a program for the year to come. There are some things, however, that we have to think about as an industry, and others that we must consider as individual canners, which I think worthy of your thought.

The first of these is your conception of the Association and its work. It could not have been foreseen some twenty years ago when the Association's headquarters were opened in a small Maryland town, that within two decades the Association's influence and work would have become world-wide in its significance. That the Association's activities are really international in scope is due to the simple fact that science knows no national boundary lines.

What the Association has done and is doing to improve canned foods and establish them in their rightful place in the world's diet, is to the benefit of the American canning industry, even though canners in other countries get full use of the results of our scientific research. What we have to fear is not so much the intelligent competition of competent foreign canners, as the shattering of confidence in canned foods through the failure of these foreign canners to turn out a wholesome and dependable product.

E. B. COSGROVE,
Retiring President, N. C. A.

To emphasize this point I need only to remind you of the fatal food poisoning cases this year due to underprocessed canned onions imported from a European country. And to emphasize what our research work means, I need only add that the scientific facts we have developed have been paid before the government authorities of that country and there is assurance that hereafter adequate processes will be used.

Looking to the future, I believe that the Association should encourage membership among foreign canners and provide for these foreign members service on all things in which they have an interest identical with ours. Of course, there are subjects on which there may be a conflict of interest, but action on these can be specifically reserved to the American canner or the foreign canner, as the case may be.

The National Canners Association comprises in its membership food manufacturers whose function in a broad sense is to preserve perishable foods in their season of production for use throughout the year. At present membership is restricted to those whose products are sterilized by heat and packed in hermetically sealed containers. There are now in our membership canners utilizing both sterilization by heat and the more recently developed freezing process, and many of our members who do not put up frozen products are likewise interested in the progress of its development. Those who use the frozen process exclusively are now ineligible for membership. There are many problems common to both processes. The question arises whether it is proper and desirable that our membership be extended to include food manufacturers who are engaged exclusively in the freezing of foods in hermetically sealed containers.

Scientific research will doubtless continue to be the principal activity of the Association. Such research is a fundamental need of the industry and it provides a fundamental service. Other association activities, except those of a routine service

character, it seems to me, should meet the same standard. Association leadership is strong, and its work effective, in only those things in which it has the united support of the industry; and such united support comes only on matters of common concern. Just as there are problems in which every canner has something at stake, so there are problems that concern only the individual, to whom it is only fair that full freedom of action be reserved.

The Association's present strength is due in no small part to the fact that it has kept to industry objectives, and has declined to enter the field of conflicting interests within the industry, or to trespass upon the field of individual business judgment. This has been reflected during the past year in the Association's attitude with respect to the grocery trade practice conference, in which the Association did not participate as representing the industry, leaving it to the individual canners to exercise their own judgment and initiative.

It may well be that with the breaking of the long continued stock market advance, less will be heard of mergers and big business. The last few months have demonstrated that big business is vulnerable as well as little business. There is nothing inherent in big business that spells success. Initiative, sound judgment, hard work, get their rewards whether they are exercised by the directing heads of big or little concerns. The danger to the small firm, if there is danger in these days of big business, is not in its comparative size, but in its comparative ability. There always has been, and I believe there always will be, a place and a profit for the small concern; and this is especially true of an industry in which there is such a big opportunity for individual ability to control and produce quality.

This fact suggests the need of the legislation for which we have striven during the past year. We all know that most canners, most distributors, are honest. Most canned foods are honestly labeled. There is present, however, a small number among us who yield to the temptation of putting a high priced label carrying extravagant promises of quality on inferior goods. Every such can disappoints some housewife, undermines her confidence in canned foods. What our industry needs, what the consumer is entitled to, is protection against such dishonest practice. That such a practice is neither good business nor good business ethics does not seem to worry those who indulge in it. What the great majority of those in the canning industry and trade desire is something that will compel the canner and distributor of inferior goods to label them honestly and sell them for what they are. With such canners and distributors there has always been an opportunity to be honest. It's time that opportunity be changed to necessity. The Association and its members should not be discouraged by the failure to get the desired legislation as early as hoped for and expected. It is bound to come, and when it does come, the industry will have another entry to make in its record of constructive efforts to safeguard the interests of the consuming public.

Report of Secretary

Frank E. Gorrell

THIS report chronicles in a brief way some of the important work that the Association has done during the past year. It is not written in an apologetic manner, but the Association's accomplishments would have been far greater had the labeling legislation, which the industry so badly needs, been passed by Congress. Perhaps to some it seems a little discouraging that with the goal so close this touchdown could not be scored, but as the whistle blew a little too soon the ball was taken back to its original position and is again within sight of the goal.

There is a genuine need for this legislation, which is recognized as necessary to establish consumer confidence, and this is well evidenced by the practically unanimous endorsement that it has received from government and state food agencies.

Following the policy established some years ago the Association is strengthening its service by giving its membership more and more information which may be interpreted by each member according to his own views and understanding. The Association would fall wide of its useful endeavor to better the industry if it should attempt interpretation. Human minds differ, and the successful man is the one who gets all available information and who knows how to use it.

The Association's general service to its membership is increasing as the years pass on. There are still many canners, though, who do not realize or appreciate just what the Association can do for them. To meet this situation a publication has just been issued which in a general way describes the Association's service. It is impossible in any publication of readable length to cover the daily routine of your organization. It can only be summed up by a generalization, and as a rule generalizations are unsatisfactory. Perhaps that is one reason why there are still outside of the Association a number of reputable canning companies whose support would be welcomed and whose contributions would greatly aid in giving an even more satisfactory service for the entire industry.

FINANCES

Attention is especially called to the financial statement of the Association which is published with this report. The cash balance at the close of the books is $32,916.18.

A tentative budget for 1930 has been prepared by the Finance and Executives Committees for presentation to the Board of Directors at the meeting of the Board in Chicago on January 18th. As is well known, the Association maintains a consistent record of living well within its annual budget. There are times, of course, when we have unusual and unforeseen expenditures to make, but these are generally taken care of by savings on other items.

The property of the Association located at 3018 Dumbarton Avenue has been sold and the cash receipts appear in the accompanying annual statement. This money goes toward paying the cost of the addition to the office building which was erected in 1927 and paid for out of the current funds.

The Association has also purchased a property adjoining the present building on Eighteenth Street, which has been remodeled and entirely furnished. It is in mind to use these additional quarters for publicity and educational purposes.

The thanks of the Association are due for the substantial cooperation of Mr. H. W. Phelps, President of the American Can Company, and Mr. Carle C. Conway, President of the Continental Can Company. These two companies, on their usual proportion of support, contributed the money to buy the building, do the remodeling and purchase the office furniture. The title of the property is in the name of the National Canners Association.

PRESIDENT E. B. COSGROVE

Although President Cosgrove habitates far from ports which have foreign vessel sailings, he knows what it is to be shanghaied! At the last convention he came to Chicago a private in the ranks, as far as the Association was concerned, and was literally impressed into service by the Committee on Nominations. It has been the custom of the Association to advance the first Vice-President to the Presidency, but this was impractical last year and new talent had to be sought. Without previous preparation through the intimate contacts that are afforded the Vice-President, Ward was called upon to take the leadership of the Association for 1929, but everyone knew he could make good and he has.

The Association has had during the past year more than the usual number of problems through which it must be diplomatically and wisely guided by its chief executive officer. Mr. Cosgrove has met each of these situations with fine intelligence and tact, and as a result of his far-sightedness the National Canners Association comes to this Chicago convention with an added year's material growth and strength, for which he is entitled to the full credit.

DIRECTORS AND COMMITTEES

The meeting of the Board of Directors which was held in Washington last May included Chairmen of Sections and Presidents and Secretaries of state associations. The large attendance was complimentary, as it indicated such great interest in the work. It also afforded an opportunity for state associations to get in closer touch with the canning industry as it is viewed from the national standpoint.

When the time came to call the customary Fall meeting of the Board, President Cosgrove decided not to hold such a meeting. At that time, several situations which the Board would properly be asked to consider had not developed sufficiently to enable the Board to reach definite conclusions, and it was therefore deemed advisable by President Cosgrove to omit the Fall meeting, with the idea that these matters could receive the Board's attention during its meeting at the time of the convention.

It has heretofore been the custom to hold the annual meeting of the Board required by the by-laws immediately before the opening session on Monday morning of convention week. This year it was felt that more time would be required for the consideration of several important subjects than could be given at a limited session during the convention, hence the Board meeting was scheduled for Saturday, January 18th. Such recommendations as the Board may desire to make will be reported to the convention at some appropriate time.

The committees of the Association have been active during the year as necessity required. The Association has been fortunate in having good committees whose deliberations and recommendations have been most helpful in the general work of the organization.

LABELING LEGISLATION

When the special session of Congress convened last spring, the labeling bill sponsored by the Association was reintroduced in both House and Senate, was favorably reported by the committees to which referred, and is now on the calendars of both branches of Congress. At the regular session preceding the special session the bill was passed by the House but failed of enactment in the Senate during the closing hours of the session.

The proposed legislation has the approval of the Department of Agriculture; it is favored by consumers because it will afford them additional and needed protection; and it has the endorsement of the food-law enforcement officials represented by the Association of Dairy, Food and Drug Officials, who at their annual meeting last September adopted resolutions favoring its passage. Such support, along with the backing of the organizations representing both the canning industry and the distributing trades, should serve to ensure the enactment of the legislation during the present regular session of Congress.

TARIFF LEGISLATION

At the annual convention last year, the recommendations of the tariff conference held the week preceding the convention were presented at the appropriate section meetings and approved. Following the convention the Association arranged for the appearance before the House Ways and Means Committee of witnesses selected at the tariff conference to present evidence for the various branches of the industry. The Secretary of the Association appeared for the industry as a whole and filed with the Committee a brief embodying the recommendations of the tariff conference.

The bill as passed by the House did not in some particulars meet the recommendations in the Association's brief, and at the hearings before the Senate Finance Committee these recommendations were again persented. Final action upon the tariff bill was not taken by the Senate during the special session, and the legislation was carried over to the regular session that convened in December.

Much of the tariff discussion in the industry has centered around canned tomatoes, the rate on which, under the Act of 1922, is 15 per cent ad valorem. The bill as passed by the House provided for a 40 per cent rate, and the Senate Finance Committee increased this to 50 per cent. With an advance in the rate apparently imminent, the imports of canned tomatoes in 1929 broke all records, the receipts for the eleven months ending November having been over 162,744,000 pounds, or 86,170,000 pounds more than in the corresponding period of the previous year.

FEDERAL FARM BOARD

Announcement by the Federal Farm Board of conditions it has tentatively adopted to govern loans to fruit growers co-operatives in Michigan and Wisconsin looking to the development of a unified co-operative marketing program, has made it necessary for the Association to consider the position it will take with respect to the Farm Board's policy. Upon conditions it has prescribed the Board proposes to advance credit to growers for the acquisition, by construction or purchase, of facilities for the marketing and processing of the fruits handled by these growers' co-operative corporations.

On the part of the canning industry, there is apparently no desire to interfere in any way with practical steps proposed by the Farm Board to give promised relief to agriculture. However, the industry hopes that the desire of the Farm Board to take prompt action to secure such relief will not lead to the adoption of measures which, by interfering with existing legitimate enterprises or by stimulating the expansion of the industry beyond the point required for market needs, will ultimately bring losses to both co-operative and independent businesses.

INVESTIGATION OF CONSUMER COMPLAINTS

That the investigation of consumer complaints is a branch of Association service which makes a strong appeal to its members and their distributors is shown by the fact that up to January 1st, 1930, a total of 2,854 complaints had been investigated. When the Association first began this work twenty years ago, most of the investigations involved the wholesomeness of canned foods and were made for the purpose of correcting unfavorable newspaper publicity affecting the canning industry. Very few complaints came direct from consumers.

In the past three years particularly there has been a marked change, and the majority of cases now involve the alleged presence of a foreign substance in the can. It is of the utmost importance, therefore, that canners use every reasonable precaution to keep foreign materials out of cans, so that they can go into court, if necessary, and make out a strong case against any claim of negligence.

Complaints of a serious nature and those involving large groups of people are investigated by medically trained men. Arrangements for such investigations in the East and Middle West have been made through Dr. E. O. Jordan of Chicago University, while Dr. K. F. Meyer of the University of California and Dr. E. D. Clark of the Association's Seattle office have made similar arrangements in the Far Western States. The research work which has been carried on or financed by the National Canners Association has been of very great value in carrying on these investigations and protecting our members from fraudulent or unjustified claims. This research has given assurance, based on scientific evidence, that canned foods are safe foods and that there is no connection whatever between canned foods and so-called "ptomaine poisoning."

Well trained investigators are also employed by the Association to make systematic inquiry into complaints of a less serious nature, and the investigations are as thorough and unprejudiced as it is possible to make them. Questionnaire forms, based on years of experience, are used to secure the most essential information required.

F. E. GORRELL,
Secretary, National Canners Association.

In addition to the assistance of its General Counsel in the handling of these complaints, the Association has employed local counsel of the highest standing in those cities from which most of the complaints come.

For the year 1929 the Association has investigated and handled 466 cases of this kind, as compared with 348 in 1928. Over one-half of these cases originated in New York City and in Boston and vicinity. In these cities damage claims have apparently become important sources of income for certain classes of people, whose only interest is to get as large a cash settlement as possible, irrespective of the merits of the claims. The Association, therefore, continues its policy of recommending no settlement without investigation and of contesting such claims, unless the investigation indicates that they are well-founded.

While the number who are availing themselves of this service is increasing, there still must be a large number of our members who are not familiar with it or do not appreciate its value to them.

The number of sources through which these complaints were reported to the Association in 1928 and 1929 is shown in the following table:

	1928	1929
Canners	105	122
Distributors	42	55
Newspapers and other sources	39	42

During the past year 41 claims have been settled, five suits have been won or dismissed, and no suits have been lost. Suits are still pending in 62 cases. It is specially noteworthy that while 34 cases have been tried in the past ten years, the suit has been dismissed or resulted in a verdict for the defendant in every case but one which the Association has defended. In that case the verdict of $50 was simply a nominal one.

The following table presents a comparative summary for the years 1926 to 1929, inclusive, of the products involved in the investigation of consumer complaints, the location from which the complaints were received, and the nature of the complaint.

Products involved:	1926	1927	1928	1929
Fruits	25	35	42	49
Vegetables	122	143	160	231
Sea foods	70	70	79	97
Animal foods	10	13	16	34
All other foods	17	42	49	53
Unidentified	3	3	2	2
Total	247	306	348	466
Location of complaints:				
New York and vicinity	76	77	91	134
Massachusetts	36	72	98	119
Other Northeastern States	20	24	34	39
Middle Atlantic States	26	48	43	57
Southeastern States	16	12	12	10
Middlewestern States	59	60	59	97
Southwestern States	4	2	4	4
Pacific Coast States	15	9	6	6
Canada	0	2	1	0
Total	247	306	348	466
Complaints involving finding of foreign substances in canned food	95	172	208	271
Proportion of cases involving foreign substance	38%	57%	59%	58%

The Manager of the Claim Department of the National Association of Casualty and Surety Underwriters spent some time last fall at the Washington office, discussing the handling of food claims. He was favorably impressed with the Association's work and policy along that line. The information supplied has been passed on to members of that Association with the recommendation of its Governing Committee that they co-operate with this Association in canned food cases.

HEALTH CLAIMS FOR CANNED FOODS

During the past year the Council on Pharmacy and Chemistry of the American Medical Association has appointed a special committee to pass on so-called "health foods." Food products, non-medicinal in character, for which health claims are made or which are advertised in medical journals, may be submitted to the Committee for its consideration. Reports of products which receive the approval of the Committee will be published in the Journal of the American Medical Association and at the end of each year, in the form of a book entitled "Accepted Foods."

The personnel of the Committee is:

Dr. Morris Fishbein, Chicago, Editor, Journal of the American Medical Association.
Dr. L. B. Mendel, Yale University, New Haven, Conn.
Dr. H. C. Sherman, Columbia University, New York City.
Dr. F. F. Dubois, Cornell University Medical College, New York City, New York.
Dr. W. M. McKim Marriott, Washington University School of Medicine, St. Louis, Mo.

There has been some tendency among food manufacturers to make exaggerated, and sometimes actually false, health or curative claims for their products. The advertising value of health claims based on such ingredients as the vitamins, iodin and iron in foods has been recognized by advertisers and sales promoters, without due recognition of their responsibilities to the consuming public and the necessity of establishing the truth of such claims by competent, unbiased authorities.

The action of the American Medical Association followed closely on the announcement of the United States Food, Drug, and Insecticide Administration that they regard as misbranded under the Food and Drugs Act any food for which false or exaggerated health claims are made.

In view of the interest aroused in this subject by these announcements, the Association is very fortunate in being able to secure as speakers for the Monday afternoon joint meeting of the convention, Dr. Paul B. Dunbar, Assistant Chief of the United States Food, Drug and Insecticide Administration; Dr. Morris Fishbein, Editor of the Journal of the American Medical Association and Chairman of the Special Committee of that Association, and Miss Lita Bane, Associate Editor of the Ladies Home Journal. The general theme of the meeting will be advertising and publicity from the standpoint of the consuming public.

RESEARCH LABORATORIES

FIELD BACTERIOLOGICAL LABORATORY—

The field laboratory this year made a bacteriological survey of about seventy-five corn and pea factories, and was also used in conducting special investigations with respect to spinach and tomatoes. This phase of our work brings the Association's technical men into more intimate contact with the plants of members and gives them a better understanding of the scope of service we are able to give.

PROCESSING OF NON-ACID VEGETABLES—

During the year an attempt has been made to impress all canners with the importance of giving an adequate process to non-acid vegetables. A list of processes for non-acid vegetables has been published and distributed to all commercial canners.

Through the co-operation of the can companies, conferences were held in Washington and Chicago with the sales representatives of the can manufacturers and canning machinery firms, at which the importance of these processes was discussed. The assistance given by the can companies and their salesmen, who have brought the proper processes to the attention of individual canners, has been of invaluable aid to the industry in this work.

The Department of Agriculture has also issued a public statement calling attention to the importance of adequate processes for non-acid foods, and has transmitted to all state and county leaders and demonstration agents the list of processes for non-acid vegetables prepared by the Association.

SPRINGER-PERFORATION STUDIES—

Additional work has been done in connection with the influence of headspace on the formation of springers in some varieties of canned fruits. The data secured emphasize, even more strongly than the results previously announced, the importance of an adequate exhaust and an adequate headspace in products of this nature.

It has been announced in earlier reports that the relative nobility of tin and iron are influenced in part by the acidity of canned fruits. This work has led the laboratories to the hypothesis that increasing the acidity of certain fruits so changes the relative nobility of tin and iron as to delay the formation of springers. Experimental packs for the study of this question have been put up during the past summer and the results so far obtained tend to substantiate this hypothesis.

It has also been shown that the dehydration processes increases the corrosive action of fruits on the container. This has been demonstrated by experimental packs of fresh and dehydrated apples, and similar packs of fresh and dehydrated prunes have been put up during the last summer to continue this study.

VITAMIN STUDIES—

Vitamin studies have been conducted with pears, pineapples, vacuum-packed peas and green beans, and green and artifically ripened tomatoes. In the results obtained from this work it is of especial interest that the vitamin C content of canned tomatoes prepared in the usual manner from field ripened stock is greater than that of raw tomatoes picked green and artifically ripened. These results are of especial significance in view of the arguments presented at the time of the tariff hearings that the importation of raw tomatoes during the Winter months was necessary to conserve public health.

IODIN RESEARCH—

During recent years attention has been focused on the relation of the incidence of goiter in various parts of the country to the iodin content of the water supply and vegetables. One State has made a special study of this question and has conducted propaganda to call attention to the high iodin content of vegetables grown within its borders. This has led to inquiries from various parts of the country regarding the same question, and the Association has considered the advisability of a survey to determine the iodin content of vegetables grown in the different canning regions and the various methods and agencies by which such survey could be made most advantageously.

The Association's study of the problem has revealed that an adequate survey of the iodin content of fruits and vegetables grown in various localities should be guided by available information regarding the incidence of goiter and the iodin content of surface waters in different parts of the country. Such information is in the hands of state institutions and can best be accumulated and studied along state lines. It has been suggested, therefore, that state experiment stations should be encouraged to give this matter their attention. Already experiment stations of several states are taking this question up and other states are considering the advisability of giving it their atten-

CONSISTENCY OF CANNED PUMPKIN—

A study has been begun of the influence of the composition of raw pumpkin and of the technological details of canning on the consistency of the canned product. It has been shown that any desired degree of consistency can be obtained by modifications of the method of wilting and pressing. The yield in cans per ton, however, for any specific consistency of the finished product varies with the composition of the raw material, especially with respect to the percentage of starch. Canners will, no doubt, be interested in the tests and variety studies which are now being planned by experiment stations in the Middle West.

DETERIORATION OF PEAS AFTER VINING—

A year ago the results were reported of the deterioration of canned peas when held under ordinary summer conditions after vining. During the present year this study has been extended to the storage of vined peas at temperatures of about 30 degrees F. It has been found that if peas are chilled in ice water immediately after vining they may be held in cold storage for as long a time as two days without greater deterioration in the canned products than occurs in from two to four hours during ordinary canning conditions. Two canneries which had an opportunity to observe this experimental work were impressed by the idea that this afforded a practicable method for handling peas during a period of glut and they used the method in a commercial way with satisfaction.

PROCESSING OF CANNED MEAT—

Following up the work on the heat penetration of meat reported a year ago, an intensive study has been made of the classes of bacteria likely to cause the spoilage of canned meat, and strains of such bacteria were selected which were suitable to experimental packs with inoculated cans similar to the work done with non-acid vegetables in previous years.

Such experimental packs were put up during the Fall of 1929 and the results obtained from them will be reported at the meeting of the Meat Section.

RAW PRODUCTS RESEARCH

The conferences on raw products problems to be held during the 1930 convention are a recognition of what is perhaps the most difficult problem before the Raw Products Research Bureau. It is hoped they may prove helpful in solving the problem of how to get the latest agricultural research information before the individuals in members' organizations whose work has to do with crop production. The able assistance of scientists from the United States Department of Agriculture and the State Experiment Stations is gratefully acknowledged.

CANNERS SCHOOLS—

Several of the agricultural colleges are conducting special schools for canners. The purpose of these is to acquaint field men and agricultural specialists employed by canners with the recent findings in agricultural research which may be applied with profit in the improvement of production. Canners in the various states in which these schools are held will, it is hoped, co-operate with the colleges in making them a success.

MEXICAN BEAN BEETLE—

The Mexican bean beetle appeared in large numbers for the first time in the Tri-State territory during the past season. Due to thorough preliminary organization and advance notice to canners and growers, the industry was fairly well prepared to cope with the situation. Spraying and dusting with approved materials were widely practiced on canning acreage with the result that but little commercial damage was experienced. While improvements in equipment and methods will be necessary in many localities for protecting the 1930 crop, canners demonstrated that the beetle can be successfully controlled. The bean beetle situation in the Tri-States is of especial interest as demonstrating that it is not always necessary to wait until extensive crop losses have occurred before applying control measures.

CROP REPORTING—

The Division of Crop and Livestock Estimates, in co-operation with the Association, early in the year worked out schedules for reports on canning crops. With respect to sweet corn and peas, these provide for statistical reports on condition at intervals of two weeks during the growing season. Experience during the past season has shown the difficulty of obtaining condition reports on a statistical basis at such short intervals with the very limited field force available for this work. It is now proposed to base bi-monthly progress reports on comments and percentage estimates instead of attempting to make a complete statistical survey every two weeks. It is felt by those in charge of the work that it will be possible to continue the reports on this basis and that the value of the service will be reduced very little, if any, by the change.

MEDITERRANEAN FRUIT FLY—

At the meeting of the Board of Directors on May 25, 1929, resolutions were passed commending the Plant Quarantine and Control Administration, United States Department of Agriculture, and the Florida state authorities, for their vigorous prosecution of the fruit fly eradication campaign and urging adequate appropriations for support of this work.

Remarkable progress has been made during the past season, both by the research forces and the quarantine and eradication division, in bringing the fruit fly under apparent control. In spite of most intensive scouting and extensive use of traps, no specimen of adult fly has been discovered in Florida since the middle of last August. From that time until November 16 no infested fruit was found. On November 16 a single infested orange was discovered. Methods of treatment of citrus have been devised which will kill any fruit fly larvae, if present, without injury to the fruit. This has permitted the distribution of Florida fruit in commerce without danger of introducing the pest into new territories. The regulations provide, however, for the destruction of any fruit known to be infested.

As a guide to appropriation policies, a special committee was recently appointed to make a survey of the fruit fly situation. The report of this committee would seem to indicate that a substantial saving may be effected in the amount of money originally thought necessary to complete the eradication program. The budget submitted to Congress provides a total of $15,381,000 for Mediterranean fruit fly, including quarantine, scouting and research.

EUROPEAN CORN BORER—

According to the United States Bureau of Entomology, the progress of the corn borer during the past season was about normal. In the middle western area of Michigan, Indiana, Ohio, Pennsylvania and western New York, there was a slight increase from 3.17 to 3.76 per cent in average number of plants infested; a very slight decrease in average number of larvae per infested plant, from 2.10 per cent to 2.07 per cent, and an increase in total number of larvae per 100 plants from 6.65 to 7.78 per cent.

Agents of the Bureau of Entomology have made an intensive study of the corn borer in central Europe in regions where the corn crop is of greatest importance and where the borer has been long established. Much has been learned in regard to detailed weather conditions that affect the rapidity of the borer's increase and the resultant crop injury. It is believed that application of the same type of study to the middle western corn belt would be of great practical value to growers and canners of sweet corn, as well as to all other corn interests.

In Ohio it was demonstrated convincingly through the use of half-acre cages that thorough turning-under of all crop residue destroys all but a small proportion of the borer population.

TOMATO IMPROVEMENT PROJECTS—

Efforts to improve quality and yield of tomatoes are proceeding along several lines. These include the study of factors affecting tomato color, in both the raw and finished product; further research on tomato yellows; enlargement of the Ten Ton Tomato Club work in Indiana and Maryland and the expansion of the Indiana studies on the effects of buying raw stock on grade; continuation of the tomato breeding work by the United States Department of Agriculture to produce an earlier tomato equal to, or better than, Marglobe; and the production on a commercial scale of tomato seed of known purity and excellence and its sale by local canners' organizations in Indiana, Maryland and some other states.

POOR SEED OF LIMA BEANS—

Canners and growers of Henderson's Bush Lima beans suffered extensive loss the past season through poor germination of seed. The causes of this failure have been under intensive investigation by the United States Department of Agriculture, and a report on the matter is being presented by specialists of the Department at this convention.

PUMPKIN AND SQUASH VARIETIES—

The question of variety in pumpkin and squash is apparently more interesting to canners today than ever before. Some western canners wish a variety which will yield a finished product of lighter consistency. In the Middle West there is considerable interest in finding a variety which will yield a heavier consistency. Without discounting the effect on the finished product of differences in method of preparing the product for canning, it appears that the variety of the raw product has an important relation to the yield in cans per ton and to body or consistency of the finished product. One of the leading Middle West experiment stations is undertaking a thorough study of pumpkin and squash varieties with reference to the needs of the canning industry.

FROZEN FRUITS AND OTHER PRODUCTS

Interest continues to be shown in the development of the freezing process for fruits and vegetables, especially the packing of frozen products in hermetically sealed containers for distribution through the retail trade. The Association has kept in close touch with the developments, and at the convention this year a representative of the staff of the United States Department of Agriculture, who has been in charge of an experimental pack in the Northwest, will address the Fruit Section and likewise be the principal speaker at one of the informal conferences to be held on canning problems. Work done by our research laboratory, it will be recalled, was presented in a paper read before the Fruit Section at the convention last year.

HOME ECONOMICS

Contacts of the Home Economics Division with consumer groups and workers in the field of home economics have greatly increased during the past year, and this is reflected especially in the number of requests for addresses by the director and in the distribution of our popular publications. In fact, many invitations have been received that could not be accepted, although during the year the director made 58 addresses. In addition, the director of the Division has written a number of articles for publication in magazines, farm weeklies and professional journals. Requests for popular bulletin material during the year called for over 41,000 copies of the Association's publications, which have gone to every State in the Union and to numerous foreign countries.

A fellowship has been granted the Foods Division of the University of Minnesota for the testing of canned food recipes that will serve a large group of people. These will be included in a bulletin which will prove useful to cafeteria managers and hospital dietitians. This fellowship will also enable the Association to make new contacts as a result of the distribution of this bulletin.

SIMPLIFICATION OF CONTAINERS

In continuance of its survey on the variety and sizes of fruit and vegetable cans, the Department of Commerce has obtained considerable data from canners and secured from the leading can companies a statement showing in percentages the amount of their total production represented by the different varieties and sizes.

Any program for the simplification of the number of varieties and sizes of cans used for fruits and vegetables will necessarily take into account both the nature of the products and the proportion of the various products now packed in different sizes of cans. With these two considerations in mind and the data obtained from can manufacturers and canners as a basis, there has been prepared a recommended list comprising 27 sizes of cans. The sizes not included in this list represent a very small percentage of the total number of cans now used in canning fruits and vegetables, and the elimination of these sizes, it is felt, will work a hardship on no one and will benefit all canners.

Each section meeting will have before it for consideration a memorandum containing the data assembled, including the recommended list of sizes, and at many of the meetings the subject will be discussed by a representative of the Department of Commerce or by others.

ANNUAL PACK STATISTICS

While the Census Bureau did not this year collect statistics on the pea pack, it has continued its work on corn, tomatoes and string and wax beans. At the time for collecting the pea statistics the Bureau was so engaged in work preparatory to the decennial census that it could not undertake the pea pack survey, and the Association accordingly sent out the schedules and issued a report, which was later revised because of errors in the original compilation.

In this connection the Association had occasion, before the collection of any pack statistics, to correct a report circulated by a news agency in New York City which quoted the Association as having made forecasts of the pack of corn, peas and tomatoes. The circulation of this report was the cause of considerable embarrassment, because it indicated a departure from the Association's long-established policy of refraining from any production forecasts of either crops or packs.

ANNUAL SURVEY OF STOCKS

The Census Bureau is also engaged in making its third survey of the stocks of canned corn, peas and tomatoes in the warehouses of canners and distributors. Schedules sent out by the Bureau are now in the hands of those from whom reports are requested. The National and American Wholesale Grocers Associations and the National Chain Store Association have co-operated actively with the National Canners Association in urging their members to make prompt return of the schedules in order that the final figures may be announced at an earlier date than last year.

SCHEDULE FOR DECENNIAL CENSUS

With the inauguration of the biennial census of manufactures in 1921, the number of canned foods products on which the Census Bureau collected separate statistics was considerably reduced. At each following census the schedule was expanded and by 1927 provision was made for separate figures on more articles than in the 1919 census. At the request of the Census Bureau, the Association prepared and submitted recommendations with respect to the schedule for the forthcoming decennial census. The schedule as submitted was designed first, to secure comparability of the 1929 figures with those of earlier years, and, second, to obtain separate figures on products which are becoming a more important factor in the industry's output.

PUBLICATIONS

Among publications issued during the past year is a new bulletin describing the aims and activities of the Association. The revised Membership List, issued in September, included for the first time, the name of the officer in each company to whom general correspondence should be directed. This Membership List has been given wide circulation among canners, food brokers, wholesale grocers, and chain store firms.

Other publications include the annual Directory of Canners, and revised editions of various bulletins and other publications of the Association. In the following list are given the titles of the publications issued, as well as the titles of papers contributed by members of the laboratory staff to technical and scientific publications.

MISCELLANEOUS PUBLICATIONS—

- Address of President, Secretary and Treasurer's Report, 1929 Convention.
- The National Canners Association: The story of an organization that has translated ideals of service into practical benefits to the industry that it represents and to the food buyers for American homes.
- Canner's Directory, 1929.
- Membership List, 1929.
- Information Letters, Nos. 291-339 inclusive.
- Nutritive Value of Canned Foods, Bulletin 95-A, revised and reprinted.
- Canned Fruits, Bulletin 96-A, revised and reprinted.
- Tomatoes and Tomato Products, Bulletin 97-A, revised and reprinted.
- Canned Peas, Bulletin 99-A, revised and reprinted.
- Canning of Food and Some Tested Recipes, Bulletin 100-A, revised and reprinted.
- Canned Corn, Bulletin 101-A, revised and reprinted.
- Census Report for 1927 on Canned Foods, Bulletin 106-A.
- Brief of National Canners Association in support of adequate protection for canned foods.
- Classification of Accounts for the Canning Industry, reprinted.

STATISTICS—

- Tomato pack, 1928.
- Pea pack, 1929.
- Corn pack, 1929.
- Wax and green bean pack, 1929.

LABORATORY PUBLICATIONS—

- Vitamins in Canned Foods, Bulletin 19-L, revised and reprinted.
- Storage Temperatures of Canned Foods, Bulletin 23-L, revised and reprinted.
- Construction and Use of Canner's Incubators, Bulletin 24-L, reprinted.
- Nutritional Aspects of Canned Foods, and Canned Foods in the Daily Diet, Bulletin 104-A, reprinted.

ABSTRACTS OF CANNING TECHNOLOGY—

- Vol. 6, No. 4, October, 1928.
- Vol. 7, No. 1, January, 1929.
- Vol. 7, Nos. 2, 3, July, 1929.
- Vol. 7, No. 4, October, 1929.

ARTICLES CONTRIBUTED TO SCIENTIFIC PUBLICATIONS—

- "Certain Acid Tolerant Bacteria Causing Spoilage in Canned Foods," by C. T. Townsend, Zentralblatt fur Bakteriologie, Parasitenkunde und Infektionskrankheiten, II abt., Band 78, pp. 161-172, July, 1929.

"Comparative Study of Toxic and Nontoxic Strains of Cl. Parabotulinum," XXV, by C. T. Townsend, Journal of Infectious Diseases, Vol. 45, pp. 87-93, August, 1929.

"An Exploration Electrode to Determine the Hydrogen-ion Concentration of Fluids in Living Tissue," by H. Ehrenberg, Journal of Laboratory and Clinical Medicine, Vol. 15, pp. 181-184, November, 1929.

"Vitamins in Canned Foods," by Martha M. Kramer, Walter H. Eddy and E. F. Kohman, Industrial and Engineering Chemistry, Vol. 21, p. 859, September, 1929.

"The Scope and Findings of Field Work During the Canning Season of 1928," by E. J. Cameron, Journal of Bacteriology, Vol. 17, p. 31.

TRADE PUBLICATIONS

During the past year the Association has been fortunate in having sincere and constructive co-operation from the trade papers, which in their endeavors to further the progress of the industry deserve the continued support of canners.

RESOLUTIONS

The resolutions adopted at the last Convention have been sent to the persons or organizations concerned, as provided in such resolutions. Those presented by the Sections were referred to the Board of Directors for consideration and action.

CORPORATE REQUIREMENTS

As required by the Association's Charter of Incorporation, the annual report of the Association has been filed with the Secretary of the State of Delaware.

REPORT OF TREASURER

AUDIT from January 11, 1929, to January 8, 1930, by F. W. Lafrentz and Company (formerly The American Audit Company).

Colorado Building, Washington, D. C., January 13, 1930.

Finance Committee, National Canners Association,
Washington, D. C.

Dear Sirs: We have audited the accounts of the General Fund and Research Laboratories of the National Canners Association from January 11, 1929, to January 8, 1930. Our report, including three Exhibits, is as follows:

Exhibit "A"—Statement of Cash Receipts and Disbursements—General Fund.

Exhibit "B"—Statement of Cash Receipts and Disbursements—Washington Research Laboratories.

Exhibit "C"—Statement of Cash Receipts and Disbursements—Western Branch Laboratories.

The cash on deposit was reconciled with bank statement, and confirmed at the bank.

The assets, according to the records, are as follows:

ASSETS

CURRENT—		
Cash in the Riggs National Bank, Washington, D. C.	$31,287.73	
Less: Cash of Advertising and Inspection Campaigns	272.85	
	$31,014.88	
Less: Cash of Special Fund $27.50		
Cash of Educational Department 739.20		
	766.70	
	$30,248.18	
Advances to Western Branch Laboratories to be accounted for	2,668.99	
		$32,916.18
Reserve Fund—U. S. Liberty Bonds		100,000.00
FIXED—		
Land, Building and Equipment, 322 Battery St., San Francisco, Calif.	$100,000.00	
Land and Buildings, 1739 H St., N. W.	96,377.54	
Land and Building, Furniture and Equipment, 805 18th St., N. W.	26,108.59	
Laboratory Equipment, 1739 H St., N. W.	23,398.97	
Office Furniture and Fixtures, 1739 H St., N. W.	4,228.93	
		250,114.03
		$383,030.21

The property of the Association is insured against loss by fire as follows:

Office and Laboratory Furniture and Fixtures, Washington, D. C. (Canners Exchange Subscribers):

Policy No. 155301 expires January 17, 1930	$5,000.00
Policy No. 157868 expires June 16, 1930	15,000.00
Policy No. 164403 expires October 1, 1930	5,000.00
Policy No. 164703 expires October 18, 1930	1,000.00
	$26,000.00

Building No. 1739 H Street, N. W., Washington, D. C. (Canners Exchange Subscribers):

Policy No. 155301 expires January 17, 1930	$10,000.00
Policy No. 157299 expires May 25, 1930	30,000.00
Policy No. 162569 expires August 26, 1930	10,000.00
Policy No. 163931 expires September 10, 1930	10,000.00
Policy No. 164404 expires October 1, 1930	5,000.00
Policy No. 164656 expires October 15, 1930	5,000.00
Policy No. 166847 expires November 16, 1930	5,000.00
	$75,000.00

Premises No. 805 18th Street, N. W., Washington, D. C. (Building):

Canners Exchange Subscribers—Policy No. 157611 expires May 11, 1930	$10,000.00

(Furniture and Equipment):

Canners Exchange Subscribers—Policy No. 164939 expires October 17, 1930	$3,000.00

Public Liability and Employees Insurance (Travelers Insurance):

Policy No. VB6465418 expires November 30, 1930	$100,000.00
Policy No. HP6113636 expires November 30, 1930	20,000.00
	$120,000.00

Our examination of the records of the Association shows that the American Can Company and the Continental Can Company have contributed toward the total cost of Building, Alterations, Furniture and Equipment for No. 805 18th Street, N. W., Washington, D. C., $26,847.79; of this amount there was expended by the Association for this purpose $26,108.59, which leaves a balance of $739.20 to be used in the purchase of typewriters for the Educational Department.

Our examination of the financial operations of the Association, together with the assurance of the Treasurer, shows that the Association is on a cash basis.

Of the $100,000.00 Liberty Bonds $20,000.00 held at the Riggs National Bank for safekeeping were inspected and $80,000.00 were inspected December 5, 1929, by three parties having access to the Association's safe deposit box where they are kept.

Respectfully submitted,

F. W. LAFRENTZ AND COMPANY,
Certified Public Accountants.

EXHIBIT "A"

Statement of Cash Receipts and Disbursements—General Fund
From January 11, 1929, to January 8, 1930

RECEIPTS—		
Members Dues		$251,398.17
General Dues		4,542.50
Directory—Advertisements in and Sale of		3,672.03
Interest on Liberty Loan Bonds		4,250.00
Special Fund		27.50
Advances to Western Branch Laboratories—refunded, Exhibit "C"		1,128.91
Proceeds from sale of No. 3018 Dumbarton Avenue, N. W., to be applied as credit to the General Fund for partial expense of building additional storage space at No. 1739 H Street, N. W., the cost of which was paid out of General Funds		8,811.80
Educational Department for typewriters to be purchased		739.20
		$274,570.11
Cash on Hand, January 11, 1929		13,868.32
		$288,438.43

DISBURSEMENTS—

Board of Directors	$11,917.59
Building 805 18th Street—Educational Department	263.18
Finance and Special Committees	5,663.66
Special Publicity Expense	1,050.00
Legal Department	6,000.00
Legal Service Investigation	17,223.12
Salaries—Secretary and Treasurer, Assistant Secretaries and Stenographers, and Janitors	37,222.26
Traveling Expenses—Secretary and Assistants	1,987.39
Printing, Stationery and Supplies	2,902.55
Printing and Publishing Members List	601.18
Postage	1,959.94
Telegrams, Telephone, Expressage and Freight	3,411.26
Bureau of Raw Products	14,657.53
Information Division	13,590.97
Research Information and Investigations	28,972.47
Canned Foods Export Corporation	52.00
President's Expense	1,320.00
Physiological Research	8,000.00
Directory—Printing and Postage	1,960.50
Home Economics Division	13,089.71
Widening H Street	359.66
General Expense	476.19
Conventions—Chicago	3,427.03
Northwest Branch Laboratories	3,000.00
Safe Deposit Box Rent	15.00
Taxes	2,028.51
Building Repairs	2,719.53
Insurance	489.49
Legal Services—Freight rate cases	1,625.00
Accountants' Fees	360.00
Expenses Chairmen Sections	713.06
Pension Fund	4,411.01
Proportion Washington Research Laboratories, Exhibit "B"	37,480.12
Proportion Western Branch Laboratories, Exhibit"C"	27,094.17
Advanced to Washington Research Laboratories, Exhibit "B"	45.47
Advanced to Western Branch Laboratories, Exhibit "C"	1,334.00
	$257,423.55
Cash on Hand, January 8, 1930, Riggs National Bank:	
General Fund $30,248.18	
Special Fund 27.50	
Educational Department 739.20	
	31,014.88
	$288,438.43

NOTE—

General Fund—Cash on Hand as above	$31,014.88
Reserve Fund—U. S. Liberty Bonds	100,000.00
Total Cash and Securities, January 8, 1930, per records	$131,014.88

EXHIBIT "B"

Statement of Cash Receipts and Disbursements—Washington Research Laboratories
From January 11, 1929, to January 8, 1930

RECEIPTS—

American Can Company	$23,555.68
Continental Can Company	11,777.84
Sale of Tin Plate Bulletins	2.50
General Fund—Exhibit "A"	37,480.12
Advanced from General Fund—Exhibit "A"	45.47
	$72,861.61
Cash on Hand, January 11, 1929, Riggs National Bank	2,101.12
	$74,962.73

DISBURSEMENTS—

Salaries—Chief, Assistants and Stenographers	$49,496.57
Traveling Expenses—Chief and Assistants	5,172.48
Fuel, Gas, Electricity and Water	1,976.57
Publications	2,603.17
Springers and Perforations	1,064.93
Bacteriological Investigation	6,659.03
Heat Penetration	230.41
Vitamin Work	4,014.97
Miscellaneous	3,744.60
	$74,962.73

EXHIBIT "C"

Statement of Cash Receipts and Disbursements—Western Branch Laboratories
From January 11, 1929, to January 8, 1930

RECEIPTS—

American Can Company	$26,789.08
General Fund—Exhibit "A"	27,094.17
Advanced from General Fund—Exhibit "A"	1,334.00
Advances Refunded	100.00
	$55,317.25
Balance, January 11, 1929, per last report	1,987.81
	$57,305.06

DISBURSEMENTS—

Salaries	$22,749.98
Traveling Expenses	2,386.74
Insurance	2,927.51
Telephone and Telegrams	440.49
Printing and Supplies	276.79
Laboratory Supplies	607.26
Gas, Electricity and Water	1,694.21
Experimental Packs	1,383.50
Springers and perforations	82.50
Taxes	807.92
Postage	83.20
University of California	15,000.00
University of California—J. G. Geiger's Salary	3,333.34
Labor	528.44
General Expense	785.48
Miscellaneous	420.79
Advances from General Fund refunded, Exhibit "A"	1,128.91
	$54,637.06
Balance to be accounted for by J. R. Esty, Chief, according to the records of the National Canners Association, at January 8, 1930	2,668.00
	$57,305.06

GENERAL SESSION

MONDAY AFTERNOON, JAN. 20, 1930
2 P. M.

Mr. E. B. Cosgrove, President of the National Canners Association, presiding.

THE joint meeting of the National Canners Association and the National Wholesale Grocers Association, convened at two o'clock, Mr. E. B. Cosgrove, President of the National Canners Association, presiding.

PRESIDENT COSGROVE: It is a pleasure for me to call this meeting together. I asked Arthur Williams if I might allude to the ancient Greeks without cramping his style. He said I might. I am reminded of one quotation, "Brethren, behold how good and pleasant it is for brethren to dwell together in peace and harmony."

This is the occasion of the second joint session of the National Wholesale Grocers Association and the National Canners Association. The law of gravity is defined as the attraction between two bodies. I don't mean by that that this is a grave situation, far from that! it is a joyous situation.

It has been interesting to watch through the years the community of interest between the National Wholesale Grocers Association and the National Canners Association as it inevitably draws those two bodies into closer and closer working harmony. Three years ago we had our first unofficial joint session. Last year the National Wholesale Grocers had their midwinter session officially with the canners, and I understand now that the meeting in the third week of January is the official session of the National Wholesale Grocers Association. It is a pleasant thing to see two bodies of that sort inevitably drawn together because of their community interests.

It is not in excellent taste, none the less, I am going to allude to a little personal history. The first appointment I had in association work was made by "Billy" Leitch. "Billy" Leitch appointed me to the Conference Committee between the wholesale grocers and the National Canners Association, and because of that I perhaps have an especially warm feeling for the grocers and the Conference Committee.

Mr. Branham, who is a neighbor of mine and an Eskimo, a man who has grown up in the cold Northwest, is here to give us greetings from the National Wholesale Grocers Association. Mr. Branham. (Applause.)

GREETINGS

By THOMAS F. BRANHAM, *President*
National Wholesale Grocers Association

IT IS a real pleasure to bring to this meeting the greetings of the National Wholesale Grocers Association. It is of real benefit to the trade when two major associations representing such interests in the great food industry come together year after year, having uppermost in our minds the advancement of this industry to the end that the greatest good may come to the greatest number.

When we realize we can trace canning back to 1783, we think of this great boon to civilization as no new enterprise. I am often reminded of the story of a fine old Civil War veteran who was in our employ. After a long forced march, hungry, almost desperate with thirst, they discovered a lot of canned tomatoes. He always said it was the most welcome thing that had ever come to him. It not only furnished food, but drink that relieved untold suffering; and here it is only in the last year or so that we have "discovered" the value of tomato juice.

As far back as we may trace this enterprise it is only the last few years that have shown the marked progress of this industry. A young man recently said it is science and mechanics that will control the business of the future. Where has science accomplished more for humanity than here?

How rapidly the real value of canned foods is becoming known and what a blessing they are proving to mankind. Encyclopedia Brittanica tells us no case of poisoning has ever occurred from eating properly sterilized and sealed canned goods.

It is interesting to note the growing confidence in canned foods, due unquestionably to the high standard to which your association has brought your industry, through scientific research and application, backed by sound, practical business methods. You have set up standards that are challenging the best brains of business and science. Your association is entitled to the greatest reward for the advancement in this important industry. You are contributing to the health and happiness of all men, women and children. You are rendering a service beyond that of occupation for gain.

The co-operation we are receiving in this as in many other activities, from our government, is being reflected in results that are proving of real value to all of our people.

I believe, gentlemen, the best days are ahead of us.

PRESIDENT COSGROVE: In answer to these greetings, I think it is fair for me to say on behalf of the canners present that we are mighty glad the wholesale grocers are with us today.

It is almost ridiculous for any President of the National Canners Association to attempt to introduce to the membership of this Association one so well-known as the next speaker on this program. I have alluded to an incident in my history and I know that at that time Arthur Williams was Chairman of the Conference Committee. How many years he has held that office I will not say as it might embarrass Arthur for you to know how old he is. Arthur Williams, Chairman of the Wholesale Grocers Conference Committee will address you. (Applause.)

ADDRESS OF A. P. WILLIAMS

THE Chainman of the Canners' Conference Committee extends to you all his heartiest greetings, and, as this is his valedictory, he will touch upon a few of the interesting high spots of the last ten years.

I can well remember my first attendance at a meeting of the Conference Committee. It was way back in those dark days when we buyers felt that a pro rata delivery was little short of a crime. My first speech was an indignant protest against the pro rata. Our good friend, Walter B. Timms, was the chairman in those days, and he was a real diplomat and smoothed out many a rough session. There were men in that conference committee who are with us today—Frank Gerber, Bill Roach, Lon Sears were staunch supporters of the canners' position. Bob Roulston, Charlie Wilcox and Sam Steele were great fighters for the distributor. So we had many a merry meeting in those old days. And then we came along to the discussion of "swells," and this was brought about through the action of Washington in prohibiting the interstate shipment of defective food. And with this prohibition it was necessary to arrive at some basis upon which we could operate our canned food departments without a serious loss on our side and without unjust and unfair claims upon the canner. So we went into session one famous day in 1924, meeting at the Wool Club in New York on Saturday at 9 o'clock in the morning, and working continuously through that day, with adjournments for lunch and dinner, winding up at the Hotel Astor at midnight with a fair and square agreement, written in my apartment on 72d street. Returned to the Hotel Astor and signed that same night.

This same session was attended by representatives of the National Canners Association, National Chain Store Association, American Wholesale Grocers Association, National Food Brokers Association, and was, without doubt, the longest continuous session of any one committee in the history of our joint relations.

Among the many other topics discussed by our committee has been the terms and conditions upon which pro rata deliveries are made—adequate and fair allowances for buyers' labels, a long and frank discussion of the merits and demerits of wood boxes as against fiber containers, the planning and carrying into effect of the Canned Food Week drives, and recently one of the most important subjects that has come before us is the semi-annual census of canned foods.

The Chamber of Commerce of the United States, the Department of Commerce and the Government at Washington, under the advice of President Hoover, is giving more thought today to distribution than to any other one subject. And in addition, with distribution the importance of a proper census of manufactured products is strongly emphasized. I had the honor of attending a conference on this subject under the chairmanship of Secretary Lamont, and a special committee has been appointed representing the largest trade associations in the United States to carry a message to their membership appealing to them to make their returns for this 1929 census completely, properly and promptly. This census will represent a picture of the manufactured wealth of the country, and the semi-annual canned food census which follows will give a true picture of the distribution.

This governmental policy has been approved by the Canners Conference Committee, and the government now invites us to increase the number of our commodities and stands ready and willing to assist us in making a more complete picture than we have with the three items of corn, peas and tomatoes.

At this Convention I notice that the principal subject for discussion is the simplification of containers. That subject will strike a sympathetic chord in the heart of Herbert Hoover, for during his administration as Secretary of Commerce he devoted a large part of his time to this problem and accomplished remarkable results in many very difficult and complicated industries. In comparison with the "swell" problem I am free to admit that you canners face a more difficult task, but there is one gentleman in the Department of Commerce at the present time who can be of a great deal of assistance to you, and if it is possible to obtain his help I commend to the National Canners Association the advice and good counsel of Dr. Julius Klein.

There is now before the Senate and Congress a bill which has been endorsed by our Conference Committee, and which we hope will come up for vote at this session. It is a bill designed to protect the consumer against inferior grades of canned foods by placing upon the labels a statement that the contents are below a standard grade. We urge you to appeal to your legislators in Washington to give their favorable support to this measure.

With these few remarks I have hastily sketched a part of the work that has been done by the Conference Committee of these two great associations, and in conclusion I wish to emphasize one outstanding fact. During the ten years that I have attended these conferences throughout the many discussions that have taken place and in the many decisions that have been rendered, and admitting the mistakes that we may have made, there never has been one single resolution passed that was unfair to the canner or to the distributor. And when we take into account the enormous volume of business transacted as a result of these conferences, with each side striving for the best they could get, it is with a great deal of pride that we can look back upon the results and to know that these results have been accomplished because of the spirit of fairness which prevailed at every session.

Gentlemen, I again extend to you our greetings and the sincerest wish that you may have in the coming year the best that the canning industry has ever known.

PRESIDENT COSGROVE: It has been said when a movement is instigated it is difficult to say how far it will go. When this idea of a joint session of the Wholesale Grocers Association and the Canners Association was set in motion, little did I think it would be possible for a wholesale grocer to retire utterly from the platform and leave a representative of the Federal Government and the other eminent gentlemen here. None the less, I am glad to see, through years of experience on the Conference Committee, a man who has been confronted with that type of conference time and again, Royal F. Clark, who survives the

competition and remains on the stage. May I introduce him to you. Mr. Clark. (Applause.)

MR. ROYAL F. CLARK (Chairman, Canners Conference Committee, Beaver Dam, Wisconsin): I want to say to you at the outset that I am very much disappointed at the announcement of my friend, Arthur Williams, to the effect that this is a valedictory address. I assume, however, that he has had advance information from the President of that great association, the National Wholesale Grocers Association, that he will not be reappointed. Now, so far as I am concerned, I have not had any such information and I have not prepared that sort of address.

In passing, let me say that I have spent six years with Mr. Williams, he chairman of one branch and I chairman of the other. It has veen very pleasant, indeed, but that does not mean, ladies and gentlemen, that we have not had arguments. In fact, so much has been said here about harmony between the canners and the wholesale grocers that I fear perhaps a storm is approaching. (Laughter.) We have had some very severe questions arise during the past six or eight years, but there has never been a time when the Conference Committee was not able to agree upon the proper solution of any problem that has come up. (Applause.)

I want to say to you that it does not make any difference whether Arthur Williams is Chairman of that branch or I am Chairman of this branch, meaning the canners, the Conference Committee will always be able to settle any problem that might arise in the future as between the wholesale grocers and the canners.

I note on the program here that I am to give greetings. There is no use of my giving greetings to the canners because they will pay no attention to that. There is a possible chance that by paying a little attention to the wholesale grocers in my greetings something will come out of it, but, nevertheless, being on here in a general way I will say this:

It is my understanding that the wholesale grocers throughout the country have done pretty well during the past year, and while I would not admit this if I were calling on any of you for a contract, I think it might be said truthfully that the canners have done pretty well during the past year. (Laughter.) So I presume that accounts for a pretty well filled room here today. You know, we always get together when we do pretty well, and we shy away from meetings when things are bad, while, as a matter of fact, that is the time when we ought to get together.

In extending greetings to all of you, if that is my duty, I think I could better stop right here and simply say to you: We are glad to have you here, and how the hell are you. (Laughter.)

Going on just a few minutes more, I ought to take this opportunity of extending greetings to certain canners. You wholesale grocers will pardon me for this reference, but under the rules which govern the activities of conventions of the National Canners Association, the new President is not announced until after he is confirmed by a vote of the delegates. However, we have always had a Nominating Committee which always meets on the first day. I will not guarantee to you, by any means, that the final action will be the confirmation of the recommendation of the Nominating Committee, but nevertheless, I should like to extend greetings to the man who I think will be the next President of the National Canners Association—Ed Hume. (Applause.)

MR. ED HUME: To those in the back of the room, I will say that I am standing up.

MR. CLARK: Now you folks all understand why I do not have to give a valedictory address, because he will have to appoint me Chairman of the Conference Committee after my doing this.

Ladies and gentlemen, we have had a very fine time (this Conference Committee), I know Arthur did and so did I, and we wanted to put over something that not only would interest every canner and distributor in this country, but that would interest every consumer in this country, and that is national advertising. We had a program that was so well worked out that it would appeal, not only to the canner but to every distributor, and I go down the line to every retailer. We thought we had it all fixed. There was an amendment to the Pure Food Law which all of you know about. We were down at Washington and every man in the House of Representatives was in favor of it. We had a hearing there, as is necessary, and then went over to the Senate and had a hearing before the committee, and it was reported on favorably. There was only one man in the United States Senate who was not ready to vote, and under the rule which prevailed at that time, we were not able to get the bill up to a vote. Since that time, as you know, Congress has been very busy with the tariff law, but the time will come, and it will come very soon, when they will have something to do down at Washington besides tinkering with the tariff and then this amendment to the Food Law is going to be passed. When that is passed we are going to put on a big advertising campaign for canned foods, which will benefit us all.

I was very much in hopes that this would be the convention in which we could announce to the world that we were going to do the thing that ought to have been done years ago—advertise the convenience and the purity of canned foods—and have it backed up so that the advertising meant just what it said. But we will have to wait, I guess, until another convention. That law is going to be passed and that advertising campaign is going through, and when we meet next year I sincerely believe we will be in a new era of merchandising canned foods.

With these few remarks, ladies and gentlemen, I want to close by saying I am mighty happy to welcome you here on behalf of the Conference Committee and I hope you have a good time. I just want to say this: That while the canners around this hotel have numerous parties and have a little entertainment going on now and then (I am saying this to the wholesale grocers), I want you to understand it is only to give you a good time. It is not for the purpose of getting you to sign any contracts. (Laughter and Applause.)

PRESIDENT COSGROVE: You know, fond as I am of Roy Clark, I wish I could let him go away and leave in your minds that he is such an absolute altruist as that last remark of his would lead you to believe. Some fellows take their jobs too seriously that they work at all the while. My private information is that Mr. Clark has been in conference with wholesale grocers. I have yet to be convinced that he was talking wholesale matters.

I am really astounded and surprised, and seven or eight other things as Howard Glumwood would say, to have Mr. Clark get up and admit to the world that he did not know that that amiable gentleman, Ed Hume, who was standing, had been officially elected to the presidency of the National Canners Association. Mr. Hume really is President. He will be duly led into office Friday morning. (Applause.)

May I add to the other greetings that have been extended to you gentlemen a greeting which has been handed to me by Mr. Nelson H. Budd, Editor of The Canning Age, which he has been asked to transmit from the White House to the food industries in their allied conventions in Chicago. This is from Herbert Hoover, President of the United States of America.

"My Dear Friends, Gentlemen of the Allied Convention: I send you my cordial greetings and my best wishes that your convention may be fruitful of new knowledge and fresh inspiration to your valuable labors in the service of the country in the vital industry of which your associations are such important agencies." (Applause.)

Annually we are confronted with the problem of finding a theme, a subject, or a movement around which a convention can center its activities. A year ago we came back here and talked and thought of this subject which Mr. Clark brought up, the amendment to the labeling act. After all, the National Canners Association has stood firmly for one thing, a wholesome, sound product inside of a hermetically sealed can, and the National Canners have also always stood firmly behind the government in its efforts to insist that the label on that can speak only the truth.

There has been a growing tendency in advertising and food promotional work toward a tinge of a thing that the National Canners Association feels possibly should not be permitted to develop, without their exerting the ultimate forces they have at their control to bring it to an abrupt stop, because they feel that that trend is in the wrong direction. We believe that the American housewife is not only entitled to a label that tells nothing but the truth, but to a label that tells the whole truth, and we raise question in our mind to any statement on a label, any statement in an advertisement that suggests a thought, that advances a claim that cannot be absolutely scientifically proved.

We also have a feeling that after all our industry is a food industry. We feel that food is so pleasant and delightful a thing when properly prepared and properly served that food as food in itself is sufficiently justified. There has been creeping into the advertising of the food industry a tendency to make claims, be they justified or otherwise, which might lead the consumers of America to take food with the thought of combining. in a delightful can of peaches, which Mr. Hume of California might put out, with certain hidden charms, vitamins vital to life.

After all, the National Canners Association, in co-operation with Dr. Eddy, has established the fact that canned foods do have that essential vitamin, yet it seems that there are things you know (we all know things about ourselves) that are very worthy things and yet we do not get out on the housetop and shout about them. Good grace of the situation prevents our doing it. We all know canned foods may have the essential vitamins and the essential minerals.

The National Canners Association has felt that food should be sold to the American housewife as food. That is the theme around which this convention has been built—food for food. We are approaching this subject from three angles. We have with us a representative of the government who will give to you this afternoon the government's reaction on that. We have a member of the medical profession, and we have with us one who will give us the consumer's reaction.

It is my pleasure and privilege at this time to introduce to you Dr. Paul B. Dunbar who is Assistant Chief of the Food, Drug and Insecticide Administration of the United States Department of Agriculture, Washington, D. C. Mr. Dunbar. (Applause.)

DR. PAUL B. DUNBAR (Assistant Chief, Food, Drug and Insecticide Administration, United States Department of Agriculture, Washington, D. C.): Before going on with my prepared paper, let me say that I have been very much interested in the remarks made by Mr. Williams and by Mr. Clark, and am considerably disturbed at the apparent skepticism of your presiding officer as to the value of this committee. He apparently thinks it is a mutual admiration society.

Let me say as a representative of the Food and Drug Administration that I have had a number of very interesting contacts with that committee much to the satisfaction of the officials enforcing the Federal Food and Drug Act. Although your President may not believe it, my conclusion is that it is a most effective committee, and I am extremely sorry that Mr. Williams is going to separate himself from their counsel.

Government Attitude on Health Claims for Foods

By PAUL B. DUNBAR, *Assistant Chief, Drug and Insecticide Administration, United States Dept. of Agriculture.*

WHEN your secretary invited me to participate in this program and discuss from the Government's point of view the question of ethical labeling of canned foods products, my inclination was to decline his invitation with emphasis and thanks. Frankly, after a good many years of experience in applying the Federal Food and Drugs Act to products of the canned foods industry, my conclusion has been that to lecture you on the subject of honesty in labeling and advertising is almost as unnecessary a task as to preach to a congregation of habitual churchgoers on the subject of Sabbath day observance.

I have said before in addresses to this association, and I repeat it emphatically, that the observations of those enforcing the Federal Food and Drugs Act have been to the effect that the majority of American food manufacturers are committed to a policy of honesty in labeling, both because it is the ethical and right thing to do, and because it is good business to satisfy consumers and to impress them with the truthfulness of printed representations about their commodities. Members of the National Canners Association as a group are certainly to be classed as literal observers of the requirements of the Food and Drugs Act, and it seems to me, therefore, to be almost presumptuous to address you on a topic involving ethical and honest labeling.

My understanding, however, is that the subject for discussion this afternoon relates to that specific class of representation or misrepresentation, both by advertising and by labeling, which has to do with the fancied or actual health-giving, health-promoting qualities of a commodity. It is not my purpose to preempt the field which will be covered by the other speakers on this program this afternoon very much more authoritatively and effectively than I can do. I wish, however, for just a few minutes to discuss with you the attitude of the organization of the Federal Government enforcing the Federal Pure Food Law towards unwarranted health claims appearing on the labeling of food products. I am speaking, of course, for the Food and Drug Administration of the U. S. Department of Agriculture.

One does not need to be a physician, nor particularly keen observer, to realize that the American public today has an obsession on the question of health, health foods, health fads, health exercises. In the lingo of the day, the public is health conscious. Certainly the desire to be healthy is natural and commendable, and a desire so to regulate the diet and the daily routine of life as to insure a maximum of health is praiseworthy. This is a day when discoveries of a marvelous kind are being made by scientific investigators tending to show underlying influences in human metabolism that 20 years ago were in a large measure undreamed of. Investigations of vitamins and food accessories have extended the knowledge of nutrition far beyond the wildest dreams of investigators a score of years ago, but even now there is a wide gap between the knowledge gained by experimental studies on animals and our application of that knowledge to the human animal. It is my conviction that we are merely on the threshold of far-reaching discoveries which may result in advances in the science of far greater moment than those of the last few years.

It is not surprising that a subject so closely associated with the public health has appealed immensely to the popular fancy. The public is only too prone to believe what it wants to believe. In its ignorance of the present limitations of scientific knowledge it has been disposed to accept without reservation the most extreme, and in some cases ridiculous, claims for the wholesomeness and health-giving qualities of various products. Unfortunately, a certain element of the advertising profession proceeds upon the theory that a market may be obtained for almost any product if its imaginary virtues are exploited in impressive scientific terms, and unfortunately, also, this theory appears to be correct. A glowing statement to the effect that Jones' carrot bread or Smith's turnip breakfast food contain all the known vitamins, and will restore the elasticity of youth to the bones and muscles of the aged, and will ward off all known diseases, is likely to be seized upon with avidity, especially by those who are in need of the very rejuvenating effects they are promised by the enthusiastic advertiser. The magic words "health giving" are today the most overworked and loosely applied members of the advertising lexicon.

Did you ever stop to reflect how broad the significance of these words really is? "Health," says the Standard Dictionary, "is a condition of soundness of any living organism; that state in which all the natural functions are performed freely without pain or disease; freedom from sickness and decay. Logically, therefore, a health-giving product should be capable of creating this condition of health, of restoring the halt, the lame and the blind, of remedying every human disease, from chilblains to cancer. But I did not read the whole of the dictionary definition. As an afterthought, apparently, it adds these words: "Health is a better heritage than wealth." The gentleman who wrote that last statement was either a stranger to modern advertising or a skeptic. If some of our modern advertising is to be believed, every commodity in the category, from "a to izzard," and including such widely differing commodities as food and tooth brushes, drugs and electric bulbs, can be depended upon to maintain and restore the health of the users. Health is no longer a better heritage than wealth. All we need is wealth and the proper advertising medium from which to select the particular infallible health-producing agent our whim urges us to buy.

We have felt emphatically in our enforcement of the Food and Drugs Act that no one is more gullible and more likely to spend his hard-earned coin uselessly and perhaps dangerously in the purchase of worthless nostrums than the sufferers from the diseases they purport to cure. When a suffering public has held out to it a promise of cure and benefit, not through unpleasant medicaments, but through the easy medium of palatable food products, is it surprising that they turn to this fancied hope with cries of joy and expectation. And the well, no less than the sick, are under the spell of these popular delusions. The public has fallen an easy victim to that particular form of advertising technique which seeks first to scare and then to reassure. Slogans like "Eat and be well," or "Eat your way to health," present an irresistible appeal to those who hanker after the good things of the diet.

This tendency to take advantage of popular misunderstanding of the science of nutrition in advertising and labeling has been observed by us in our work under the food law with a growing amount of apprehension. We recognize fully the right of any manufacturer to claim for his commodity any virtue which it truly possesses. We do not recognize his right to mislead the purchaser or to base his claims on half-baked or half-understood pseudoscientific discoveries. Label representations regarding health-giving properties or vitamin content which are not borne out by the actual facts can only be regarded as in contravention of the law, and in this connection it must not be forgotten that no less an authority than the Supreme Court itself has held that statements which may deceive through indirection or ambiguity are within the ban of the statute. This being so, it must be held that indirect or sweeping statements implying the presence of significant amounts of all the vitamins or of specific vitamins are contrary to the statute, unless these representations are literally true.

Let me disclaim at this moment any wish to be understood as believing that the terms of the Pure Food Law control advertising appearing separately from the package or container which is shipped in interstate commerce. Our jurisdiction under the Food and Drugs Act applies to the label of the package itself and any literature or labeling which accompanies the package as shipped. While I deprecate the employment of statements in advertising literature which cannot legally and honestly be used on the labeling which is subject to the Food and Drugs Act, the Government nevertheless claims no authority under the Food

and Drugs Act to control such separate advertising claims. I must appeal to any who may be disposed to make this distinction between labeling and advertising to consider the matter from the standpoint of absolute ethics and business honesty. I am happy to bear witness to the fact that a growing number of advertisers, advertising specialists and advertising mediums do regard the question in this light.

So seriously has the Government considered the present tendency to employ unwarranted health claims in the labeling and sale of food products that it has felt called upon through the Food and Drug Administration to issue several announcements, and I can do no better at this point than to read portions of these statements. In an announcement issued on May 22, 1929, under the caption "Beware of So-called Health Foods," the following statement was made:

"The American public should beware of 'health foods,' 'life grains,' and other food products for which makers claim curative or health-giving properties.

"The Food and Drug Administration believes the use of the word 'health' in connection with foods constitutes a misbranding under the Food and Drugs Act. The use of the word implies that these products have health-giving or curative properties, when, in general, they merely possess some of the nutritive qualities to be expected in any wholesome food product.

"The label claims on these products are such that the consumer is led to believe that our ordinary diet is sorely deficient in such vital substances as vitamins and minerals, and that these so-called 'health foods' are absolutely necessary to conserve life and health.

"In the enforcement of the Food and Drugs Act it is necessary to warn manufacturers of these products to have their labels conform to the facts of medical science and actual laboratory tests. The Food and Drug Administration does not object to calling these products 'wholesome,' provided they are wholesome, but the effort to give the impression that we all need something added to our every-day diet if we are to avoid nutritional disaster is a misrepresentation which the Food Law enforcing authorities aim to combat.

"So-called 'health-giving' biscuits, foods and waters are not only a waste of money if purchased for their curative properties, but are responsible for a more serious loss because their use is relied upon as a substitute for appropriate corrective measures, such as a proper diet, exercise and sunshine.

"Of the 'health foods' which have flooded the market in past years, there are generally three recognized classes. Th first of these includes whole wheat, rye, oats, bran and mixtures of these. Valuable as these grain products are to the diet, they are misrepresented when curative properties are claimed for them, and when the maker says they provide 'life-giving vitamins in their tasty natural state.' The tendency to exaggerate the merits of cereal breakfast foods and 'health foods' has received the increasing attention of the administration in an effort to keep statements regarding them in strict conformity with fact. Indiscriminate use of the word 'vitamins' in labeling may be impressive, but it must be proved that vitamins are in the product if the manufacturer is to avoid a charge of misbranding.

"Waters, mineral or mineral imitated, are sold by health resorts or promoters who attempt to convince the consumer that by their use at home the same benefits may be secured as by staying at the resort and following a proper diet and taking rest. Enthusiastic and glowing accounts of the merits of these waters are frequently exaggerations. It is the purpose of the Food and Drug Administration to insure not only truthful labeling of these products, but also their purity and freedom from contamination of every description.

"The third general group of so-called 'life-giving' products includes candy containing calcium, salt containing iodin, food materials with phosphates added, bread containing carrot flour, crackers containing senna, a laxative drug, and chewing gum containing phenolphthalein, a coal tar cathartic. There are some parts of the country, notably in the North Central States of the Mississippi Valley, where the water and vegetables are deficient in iodin, and where the use of salt containing iodin has been held to be beneficial in the prevention of simple goiter, but the general use of iodin in salt is not only unnecessary, but may be harmful. In some cities where the water supply is deficient in iodin the addition of this element to the water has become a community project.

"During the past few months the administration has been giving attention to the merits of the newly introduced irradated food products, which, it is claimed, give the anti-rachitic vitamin D to the diet. Certain products when exposed to ultra-violet rays become activated, developing anti-rachitic properties. But ordinary sunshine is rich in ultra-violet rays and provides vitamin D in abundance. The use of a drugged food, therefore, is needless to persons getting plenty of sunshine, the administration holds."

A briefer notice, addressed more particularly to manufacturers of cereal products, breads, biscuits and cakes, was issued on August 10, 1927, and reads as follows:

"There have come to the attention of the Food and Drug Administration a considerable number of domestic and imported food products which are represented on the labels and accompanying literature as of particular value in maintaining, promoting or restoring health, or in acting directly as therapeutic agents in the treatment of disease. These forms of labeling have been noted particularly on cereal products, such as breakfast foods, bread and other bakery products and alimentary pastes. In many cases of this sort the statements or claims appearing upon the labels and literature were false or misleading to an extent constituting misbranding under the Federal Food and Drugs Act. In such cases the Administration has found it necessary to proceed against these commodities shipped within the jurisdiction of the act.

"The use of the word 'health' in connection with the names of such articles or the use of similar expressions on the labels and literature constitutes misbranding, unless the products of themselves can be relied upon to give health or maintain the health of the consumer.

"Further, it has been noted that such statements as 'rich in iron, lime and vitamins' are not justified by the composition in many cases.

"All statements of composition as well as all statements of therapeutic effect must be fully warranted, otherwise they are properly classed as misbranding."

Let me digress for a moment from the strict confines of my subject, which relates solely to labeling. I want to touch upon a tendency which is beginning to be evident in the food industry, and which in my opinion is to be deplored. I refer to the disposition manifested by manufacturers of certain staple food commodities to attempt the attainment of a perfected food by the addition, in a more or less arbitrary fashion, of some of those ingredients which investigators tell us are essential to a balanced ration.

Even in the case of so important and hitherto relatively inviolable a staple as flour it has been proposed to improve upon the ordinary composition by the addition of calcium carbonate. The addition of iodin in some form to foods, and the irradiation of other products, are also indications of this tendency. I do not mean to infer that such additions are illegal if the added substance is not deleterious and appropriate label declaration of its presence be made. Neither do I contend that such specially treated products may not be beneficial to certain individuals or to certain groups of consumers; but to attempt to foist these products on the general public because they can be made to appeal to them is neither commendable nor in the public interest.

In a nation like the United States, with an extremely varied and nutritious food supply available in almost all sections and at all times of the year, with ample sunshine and fresh air, wholesome water supplies and abundant and pure milk, it is hard to believe that the average consumer has arrived at the point where it is necessary to doctor his food supply. Certainly we have not reached the time in our knowledge of the science of nutrition—and I, for one, hope that I will not live to see that time—where the demands of nutrition may be satisfied by the ingestion of a pill containing all the necessary food ingredients.

There are easily observable evidences that the pendulum is already on the backward swing and that the tendency today is toward normal food products as nearly as practicable in the condition in which nature has produced them, and as varied as it is possible to obtain them in the average American home. Regardless of how fast this pendulum swings in the direction of normal food products, or away from them, I cannot conceive that the point will ever be reached when fruits and vegetables, meats and sea foods, will not possess a popular appeal. So long as this appeal exists there will be a demand for the manufactured products of your industry approaching as nearly as may be to the condition of the fresh product, or that product after being subjected to the normal culinary processes of the home. The notable progress you have made in the development of palatable and attractive foods, and above all in the perfection of methods which insure safe foods represents, I am sure, a more real and lasting contribution to human welfare than the evolution of a line of doctored foods could possibly accomplish.

I cannot refrain from appealing to your pride in your industry, the function of which is the preparation of staple foods, and to urge upon you the preservation of the integrity of these products without yielding to the temptation to meet a temporary demand for artificial additions which, it seems to me, should more properly be within the function of the dietician and the medical

specialist in specific cases. Let your effort be to stimulate the demand for your commodities by improvement of natural quality rather than by their artificial alteration to meet a fancied deficiency. It is impossible to believe that that appeal to the appetite which has been responsible through generations for the instinctive selection of pure and unadulterated foods will not continue in spite of all advances in the science of nutrition. When the pendulum swings back, as it is bound to do, those food manufacturing industries which have adhered to the principle of producing sound, natural foods, without additions or subtractions other than those normal in the course of ordinary culinary preparations, should be in a position to reap the benefit of their constant adherence to this program.

Now, returning to my specific topic, let me say again, gentlemen, that the labeling of food products with claims implying that they possess curative, health-giving, healing qualities, when as a matter of fact they merely possess those wholesome, nutritive qualities which a food of that particular description should possess, is in our opinion a misbranding within the meaning of the Food and Drugs Act, and subjects the product so labeled to the penalties imposed by that act. In like manner, extreme and unwarranted vitamin claims must be classed as illegal.

But it is unnecessary in an audience like this to refer in a threatening way to the penalties of the law. As I indicated at the outset, it has been the practice of this Association as long as I can remember to accept as good business the policy of honest labeling.

Having emphasized what we consider the illegality of statements of the character referred to in the press notices which I have read, let me allude to another phase of the matter which appeals to me from the business point of view even more strongly than does the matter of strict compliance with the Food and Drugs Act. The products popularly known as patent medicines have acquired an unenviable reputation in the public mind because of the vast number of unspeakable fakes and frauds which have been foisted upon the public from time to time, despite the strenuous efforts of the Government and of other agencies to control them. There are, in my opinion, honest proprietary preparations. Their existence is legalized and recognized by the Food and Drugs Act. There are great numbers of others, however, springing up like mushrooms, suppressed in one place to appear in another, faster at some times than Governmental forces, limited as they are in force and funds, can cope with them. These have gained for patent medicines as a whole an unenviable public reputation.

I could not refrain some time ago, when a manufacturer of a wholesome and palatable food product came to me with a label in which he claimed the presence of all the vitamins—and I don't know whether they were all there or not—and in which he claimed remarkable health-giving properties, I could not help from asking him why he sought to put his wholesome food product into the patent medicine class, and thereby acquire whatever disfavor belonged to that particular type of product. I said to him, "You have a pure, a nutritious, presumably a wholesome food product. It is honestly packed and it ought to appeal to the consuming public because it is a palatable and desirable food. Do you want to brand it as a medicine? Do you want the consuming public to acquire the idea that they should turn to this particular delicacy only when in an unsound physical condition? Don't you want to sell your product, don't you want it to appeal to the well rather than to the invalid class? My advice to you, Mr. Manufacturer, is to eliminate anything from your label and likewise from your advertising that will smack of health claims and restrict yourself to an appeal based on the good character, quality and honest food value of your product," and that it seems to me, gentlemen, in a nutshell should summarize what I have to say to you from the standpoint of the Government's interest in honest labeling of canned food products.

PRESIDENT COSGROVE: It is my pleasure at this time to introduce Dr. Morris Fishbein, who is Editor of the Journal of the American Medical Association. Dr. Fishbein will talk on "Food Fads and Fallacies." (Applause.)

DR. MORRIS FISHBEIN (Editor, Journal of the American Medical Association, Chicago, Illinosi): The attempt to separate in any way the medical and healthful qualities of foods reminds me of a very interesting little poem written about two centuries ago which I heard some years ago. It had to do with Dr. Peck; in fact, it was the epitaph to Dr. Peck.

"Here lies the body of Dr. Peck,
Who fell in a well and broke his neck.
It served him right, the fault was his own.
He should have attended to the sick, and let the well alone."
(Laughter.)

Food Fads and Fallacies

By Dr. Morris Fishbein
Chicago, Ill.

THE evolution of our knowledge of diet can be pictured in a curve which parallels the base line until the beginning of the twentieth century, and which then rises abruptly almost to the perpendicular because of the tremendous advances made in the last quarter century. We were concerned primarily, previous to that time, with the control of digestion and indigestion and with the problem of avoiding mistakes of diet rather than with eating for health and growth. Today we know that much of the freedom of the human being from disease depends on what he eats and the quantities in which he eats it. Those who have studied diets scientifically realize that food is but one of the many factors of importance for the maintenance of good health, but probably most important of all of them. For this reason, no doubt, the entire field of diet and nutrition has attracted the attention of food fanatics and scientific imposers who teach strange doctrines founded on fallacy and urged primarily for the benefit of the individual who urges them rather than for those who blindly follow a misguided leader. Into this field come those who exaggerate a single phase of modern scientific knowledge into a cult of diet, as well as those who urge the complete avoidance of food for fear perhaps that insufficient knowledge may lead to disease.

One of the most significant factors of recent economic changes in the United States is the change in the American standard of living and the attitude toward food as one of the pleasures as well as one of the necessities of life. With increasing prosperity, malnutrition and undernourishment are no longer significant problems. With education in the schools concerning proper diet, everyone realizes the importance of a well-balanced diet containing sufficient quantities of proteins, carbohydrates, fats, the necessary mineral salts and the vitamins. With increasing luxury, with the coming of the machines for much of the heavier work of life, and with changing methods of transportation, the American citizen uses much less energy and requires a smaller number of calories to meet the demand for energy output. The energy producing foods are no longer consumed in tremendous quantities; in fact, the average American consumes today 2,500 calories per capita as contrasted with some 3,500 calories fifteen years ago. Much of this decline has taken place in the consumption of cereals, including what and corn. At the same time consumption of dairy products, vegetable oils and the miscellaneous vegetables and fruits has greatly increased. Dietary studies of American families show almost invariably that the higher the income the lower the place of cereals in the diet. The greater the increase in income, the more likely are meats to become a significant part of the diet, particularly since meats furnish the major part of proteins, and this in a readily assimilable form.

The fruits and vegetables are the most important sources of vitamins A, B and C. The leafy vegetables are necessary for their content of mineral salts and for their contribution of roughage in the diet. The fruits, and particularly the citrus fruits, have laxative qualities and tend to maintain the alkaline state which is necessary for a feeling of good health, and which is disturbed by an overuse of cereals or of meats. Unquestionably, the growth of the canning industry during the past fifteen years has served also to make available to a vast majority of our public the fruits and vegetables which were formerly to be had only by those who could afford the extraordinary high prices of such dietary substances, particularly out of season. The change in the nature of the food supply is unquestionably related to all of the other trends in American living. The tendency toward the building of great apartment houses and the kitchenette has made the canned foods a necessity for the reason of space alone, if for no other reason. The trend of household management is in the direction of a simpler mechanism. More and more foods are being bought ready cooked and for a single meal, and the leftovers are turned promptly into the incinerator. The demand for smaller units of canned foods, as has been noted by Leo Wolman, is one of the most significant factors in the modern trend.

Another of the significant factors concerned in the change of modern living conditions is the speed of modern life. Everything that we now do is done at a rate perhaps double or many times the speed which formerly prevailed. Competition in every field is tremendous, and new products are rushed to the public, in many instances, long before it is known with accuracy what they contain and whether or not they are safe for home consumption. Modern high pressure advertising can change the habits of the nation in a month. The factor is especially significant in relationship to the new hazards that affect human life. For in-

stance, it is within the memory of all of us that electric refrigeration became the current mode and that devices for this purpose began to be installed in every great apartment house and in most individual homes. It required a number of deaths in the city of Chicago before public attention was directed to the hazard of leaking methyl chloride gas and before steps were taken to prevent such accidents in the future. In the same way, new food products preserved for human consumption are not infrequently launched upon the market without proper scientific control as to their safety. It requires an epidemic of botulism or of intestinal infection with dysentery organisms to prove to the manufacturer that it might have been better to have conducted suitable research before launching the product.

Claims are made again and again for special virtues associated with the use of certain food substances before scientific research has definitely established the fact that the claims are warranted. Because a fresh product contains vitamins it cannot be assumed that the preserved product has retained the vitamins. Perhaps one of the most significant phases of modern research in the canning field has been this attempt to substitute exact knowledge for guessing in the promotion of canned food. Already it is known through research conducted in your laboratories that the sun-ripened tomato is much more likely to be an adequate source of vitamin C than the green product hastily ripened by artificial means. It is known that American canned tomatoes are likely to contain much more vitamins than English canned tomatoes. Because exposure to the sun's rays produce vitamin D in the body, it cannot be assumed that exposure to the sun's rays or to artificial ultra-violet will produce vitamin D in every other living tissue. Unless a sufficient quantity of ergostrol, the precursor of vitamin D, is present in the tissue, exposure to ultra-violet rays will not produce the vitamin.

Recently certain canned meats were rushed upon the market without adequate tests as to whether or not the method of packing was sound from the point of view of safety in killing all bacteria present in the material before packing.

As a result, deaths occurred from botulism, and it was necessary to call in the product and to conduct, after the unfavorable impression had been made on the public, the research which should have been made before the product was launched.

Not long ago a grower of grapefruit in one section of Florida insisted that the grapefruit grown in that partciular section had special virtues in the treatment of diabetes. As a result of this utterly preposterous claim, the grapefruit market everywhere was injured, and patients with diabetes, who should have depended on insulin and scientifically selected diets, temporarily gave up the proper methods of treatment and risked their lives with grapefruit. This incident can be multiplied, in fact, in relationship to innumerable health campaigns conducted all over the country.

It is also important to remember that foods must be taken into the body primarily for growth and health, and not primarily for the control of disease. True, the degenerative diseases which afflict mankind are the effects of wear and tear, and may be minimized by suitable control of the diet; true, the diseases due to defects of nutrition and the lack of the necessary food substances may be controlled by the provision of the missing vitamins, but in the vast majority of cases mankind eats in order to provide his body with fuel for his energy consumption and to maintain his tissues in a state of health.

Hence the folly of claiming for various natural foods special contents of infinitesimal quantities of various mineral salts and vitamins must not be permitted to dominate the manufacture of millions of cans of staple foods, of millions of packages of cereals and of millions of pounds of meat. The statement is particularly apropos in connection with recent campaigns asserting the special value of canned foods prepared from fruits and vegetables grown in soils especially rich in iodine or iron or other mineral salts. The quantity of iron or iodine or calcium or phosphorus required by the human body is now definitely known, and it is understood among scientific nutritionists that these quantities are to be had through a vast variety of foods, and that a person who eats a well-balanced diet is likely to get these quantities without paying special attention to any one of these particular salts. There is no necessity for limiting the output of canned fruits and vegetables to any particular portion of the United States. Wherever these products grow in quantities and in a quality suitable for preservation, they may well be packed for preserving as part of the American diet in a season and at a time when the fresh fruits are not generally available.

A significant slogan for every industry associated today with human life must be research and experiment before products are placed on sale. Only by repeated reiteration and continuous observation of this slogan can modern life progress with safety to mankind. Indeed, already the American people have realized that safety lies in science, and they are beginning to ask for the evidence whenever health claims are made for any particular product.

Recognizing the importance of the newer knowledge of foods in relationship to health and growth and to the prevention of disease, the American Medical Association, through its Council on Pharmacy and Chemistry, recently established a committee on foods, which is examining all food products and all food campaigns for which health claims may be made.

The pages of popular magazines, of newspapers and of medical journals contain an increasing number of advertisements of food products. The growers, producers and distributors of such products have learned the value of the health appeal. Great campaigns are being promoted by co-operative organizations in favor of meat, of flour, of vegetables, of fruits, and of other natural foods. The vitamin is the most interesting and mysterious substance that has appeared on the medical scene, and the alert copy writers have not failed to dramatize the interest that it has awakened in both the medical profession and the public. Malted milks under various disguises are vaunted as tonics and as sleep producers. The medical profession, awake to the newer knowledge of physiology, is turning its interest increasingly to the promotion of health and to the use of properly selected foods for such purposes. Moreover, diet is recognized as of great importance to the control of diseases affecting the digestive tract and for the management of the degenerative diseases: diseases of the kidneys and of the circulation. As these trends in medical practice have developed, the need of somebody to express judgment of food products and food advertising, in the same way that the Council on Pharmacy and Chemistry considers medical preparation, has become apparent.

The manufacturers of food products, distributors and all others interested in the promotion of natural food substances or of modified foods, for which claims are made in relation to the promotion of good health, are submitting to the committee the products and the advertising material used in advancing their sale. If a product is of known composition, if the claims made for it are justified by the composition and by modern knowledge of digestion and assimilation, if the advertising is up to the standards set by the Council on Pharmacy and Chemistry, advertisements of the product will be permitted in the publications of the American Medical Association, the product will be listed in the book on foods similar to New and Non-official Remedies, and the manufacturers will be permitted to use a symbol indicating that the product has been accepted by the committee for listing in the book of foods. If the product cannot reach the standards set forth, a report will be published as is done for drug products, and advertising of the preparation will not be permitted in the publications of the American Medical Association. The great advertising agencies have welcomed the initiation of such a body, and there is reason to believe that the work of the committee will do much to sustain scientific standards in a field already mired in a morass of hokum and folly.

Through its public work, particularly in the last decade, the American Medical Association has gained the respect and admiration of vast numbers of the American people. That good-will is an asset of no slight importance to public health. The work of the Committee on Foods should do much to carry still further the message of good hygiene and of scientific medicine.

PRESIDENT COSGROVE: The essence of our theme today is truth in advertising. Just to prove that we live up to what we preach, in addition to the published program, Dr. W. H. Eddy, Director of the Bureau of Food Sanitation and Health of "Good Housekeeping," and Professor of Biochemistry at the Columbia University, is going to close the meeting with a short address. Dr. Eddy is the man who has worked with Dr. Kohman.

May I now introduce to you briefly Miss Lita Bane, Associate Editor of the Ladies' Home Journal, Philadelphia. Miss Bane. (Applause.)

What Advertising Can Do for the Homemaker-Consumer

By Miss Lite Bane
Philadelphia, Pa.

TO speak for the homemaker-consumers is something that only the very hardy or the very rash would undertake, for they make up a tremendously large, varied and powerful group, unorganized, with no one authorized to speak for them.

You may say that the consumer is speaking for herself in many ways—chiefly in the way she chooses to spend her money. But who can be sure that she is actually making these choices? It may be that she is yielding to the importunities of those who

have things to sell and is then either shame-facedly trying to make the best possible use of her purchases, or blustering and complaining but finding no adequate way to protest. For while farmers have little organization, homemakers have less, and anyone who attempts to be their spokesman is only guessing at what they want, and in many respects their wants are as widely varied as are those of the individual farmers. Nevertheless, I believe it is fair to assume certain rather basic wants on the part of homemaker consumers.

Undoubtedly they all want clean, safe food. They want food that is plainly labeled—a label that tells them something about the quality and the quantity of the goods in a way that can be quickly read and easily understood. They want reliable goods, something they can count on as always being of high standard. And they want good value for their money.

Advertising at its best has performed genuine service for the woman who buys for her household. At its worst it has bewildered her, and complicated her buying problems.

There are some kinds of advertising that do not help her. At this point I leafed through three magazines carrying food advertising and had something of a surprise. Three years ago I supervised a student's thesis in which she analyzed and criticised advertising material appearing in four women's magazines over a period of several months. One of her chief criticisms was the fact that they referred to articles as "the best," "superb," "unexcelled," and by other terms equally as useless in guiding the buyer.

Another criticism was the false impression sometimes left regarding health. As we all know, many factors contribute to good health. Good food is only one of them, and the assurance that certain health lies in eating one specified food is neither true nor is it, on second thought, very convincing. The difficulty is that many of us are too busy to give the second thought until it is too late.

It is apparent that changes for the better have been going on during the past three years, for I found only one "best" advertisement (that not food, by the way) and fewer claims for promotion of general health, more for the specific contribution made to health and general satisfaction by the particular food being advertised.

There are still some claims being made that do not seem fair and emphasis is put on factors that are fairly unimportant, but on the whole the situation seems to be much improved. So much so that, whereas I had planned to use a composite of advertisements to illustrate these points, the number of illustrations is so small that it would amount to pointing them out by name, which is not the purpose of this talk.

Granted that even when the precise truth is told the buyer is frequently overinfluenced by persuasive words, beautiful colors, stunning photographs. However, I am not sure we can place the whole blame for this on the advertising world. They have developed keen tools in their business. The buyer must develop keen tools in her business, and by knowing the needs and wants of her particular family, and the contents of its pocketbook, she needs to train herself to match wits with the best of them, all save the super-aggressive, the one who leaves her prone, exhausted and resentful. May their tribe decrease! She can probably never cope with him.

So much for a brief sketch of some of the grudges that household buyers hold against advertising.

I was much gratified to find the following paragraph in a recent magazine article prepared by a copy-writer for an advertising agency:

"Such honorable advertisements (he gave examples) show that there are still literally hundreds of manufacturers who are proving every day that they can obtain advertisements that are bright, interesting and capable of doing just as good a job of selling, and in most cases better, as the highly exaggerated type of work now apparently in style."

Now for the other side. Reduced to the lowest terms, it is much like the situation in many families. While they do not always get on well together, they cannot get along nearly so well apart. The advertiser and the homemaker-consumer have too many interests in common to make separation possible. Cooperation rather than antagonism would seem to make for greatest satisfaction for both. What, then, can the advertiser do to make the consumers' buying more efficient, which in the end is, of course, the best business for advertiser and household buyer alike.

The homemaker-consumer is always interested in new goods that come on the market, and in being told about unfamiliar goods. The recent advertisements of Campbell's soup have caused considerable comment. A friend ran across it and gave me a test to see how many of the kinds I know. I could name only five, and was grateful to be introduced to the others in this interesting way. I was glad to be told of the new Del Maizo corn, that Chinese noodles and bean sprouts could now be had in cans, and many other articles could be added to this list. All women, I believe, like to know what the market affords. They even like to be reminded of foods they already know about, since they are constantly on the lookout for suggestions for these "ungodly three meals a day," as one homemaker referred to them. Perhaps they didn't know they were hungry for ham until a bright advertisement caught their eye.

One psychologist tells us we live by routine, but we must have new experience—variety. Consequently, we are always interested in something new, something different, not so different as to seem "queer," but just enough different to give it a piquant interest.

New uses for familiar articles of food the homemaker appreciates for the same reason, using tapioca as a precision ingredient for example. She likes to know about new techniques in cookery, such as have recently been developed in vegetable cookery, the new findings in regard to proper quantities of various kinds of baking powders to be used, and anything else that will improve cookery processes and make cooking itself more interesting.

Improved recipes are always acceptable. In many respects recipe building is in its infancy. Our standardized measuring apparatus, teaspoon, tablespoon and cup are not universally used by any means. Nor is the habit of using level measures well established. Only when they are can you guarantee the recipes you furnish will produce uniform and satisfactory results. We still have many women using a handful of this, a dash of that, "a small amount" of something else without regard for accuracy. And the cups being used for measuring vary from a small one given as a gift to one of the children years ago to grandfather's large coffee cup, no longer fashionable, but still good enough to use for something.

While for some ingredients inaccurate measurements do not matter so much, it is highly important for others. An extra bit of sugar in applesauce makes little difference except in the flavor. An extra bit of baking powder in a cake may be enough to spoil it. Advertisers can be useful to housewives in continuing their work of developing standardized, thoroughly well-tested recipes, and emphasizing the necessity for using accurate measuring devices and standard procedures.

Household buyers like also to have the special qualities of a product pointed out, be it crispness, delicacy, flavor or what not, that the seller believes to be peculiarly characteristic of his particular goods. If your peas are particularly tender, if your can of soup is rich and has a delightful flavor of mushroom, the buyers like to be told about it.

Many women are interested in the activities of industry—what you are doing to make your products what they are. They are impressed with the amount of costly machinery, the numbers of scientifically trained research workers, the sanitary standards maintained, the convenient packaging and many another practice of first-class industrial plants. These things they can learn through the advertising columns, and they help to build up confidence in the persons handling our food supply.

The household buyer appreciates lovely color, attractive photographs. Art in advertising can do a great deal to improve her taste as well as give genuine pleasure. But do not use these devices as a substitute for important facts about the food. For she wants facts—facts made sufficiently inviting to interest her in reading them.

At a recent meeting of the Associated Grocery Manufacturers Association our editor, Mr. Schuler, traced briefly the history of advertising as follows:

"We are today in the fourth stage of the development of advertising as an art. It is interesting to look back over the history of advertising and to see the stages by which it has developed. Turn back the files of our magazines and you will find that thirty years ago the manufacturer very often used as the chief inducement to the public to buy his product a picture of himself.

"Then came the second phase, and a picture of the product itself was shown, or a picture of the factory where it was made. Both these types of advertising were founded upon price, and with comparatively little thought of the consumer.

"The third stage came with illustrations showing the use of the product—aimed now at the buyer. And the fourth stage, which brings us at last to true consumer copy, puts its emphasis on the results of the use of the product."

Undoubtedly women want to know the probable effects of the goods they are about to purchase. These effects are difficult to represent concretely, giving due consideration to other influential factors. However, the effort is worth while, and notable progress is being made.

To be sure, the body requires nourishment, and we now know some of its basic needs and the foods that supply them. But

food may offer much more than this, and it would undoubtedly never have filled the important place it now fills in our general culture if it did not offer, in addition to its tissue building, fuel-providing, body-regulating offices, those of genuine pleasure through odor and appearance and flavor, an occasion for pleasant social life and the thousand and one ceremonies and customs that have come to be associated with the serving and eating of food.

Now that (in theory at least) we are having more leisure and are promised that as industry becomes more efficient we shall have even more leisure, we shall undoubtedly look to the elaboration of our enjoyment of food in variety and quality, if not in quantity, as one of the possible sources of enjoying our leisure.

Perhaps advertisers could tell homemakers somewhat more about how their foods can contribute in this developing field of food for variety, flavor and hospitality. The effects of food are of tremendous importance, but the physical effect is only one of many, and one that should be cared for most easily and rather inconspicuously once we've acquainted ourselves with basic needs.

Then we can proceed as we have with clothing and housing, to emphasize the aesthetic and social satisfactions to be had through embellishing and elaborating the possibilities of enjoyment beyond the strict physical essentials.

I do not quite know how it can be done, but I am sure there are several things that would help the buyer immensely. Point out to her what makes for quality. If you have standards by which you judge a can of peaches, suggest these standards to her. What are the earmarks of quality? Insofar as you are able, label the cans so she can know the quality by reading the label. It will have to be in terms easily understood. The story is told of a woman who once commented that she noticed on a packgage that it contained NaCL, and, of course, she wouldn't think of buying anything that had that on it.

I have never been quite sure what we ought to expect of the photographs or drawings on the wrappers of cans. Should we look upon them as we do a seed catalogue, hopefully and enthusiastically, knowing full well that our results are not likely to duplicate the illustration? In the seed catalogue they become an ideal, something to strive for, and while results are often disappointing, we have had recreation in working our garden, and we always hope next time the results will look more like the picture.

But the can of beans selected for a guest luncheon—the can whose wrapper portrays tiny, beautifully green, stringless beans, is opened to be heated just before serving. When these beans turn out to be large, rather coarse, stringy, yellowish green, it is certainly far from amusing, and with our present lack of standardization there is a chance that this may happen more than once. The canning industry would indeed be doing a large service for the homemaker-consumer were it to make its pictorial representations indicate what in the way of size, color and quality the can contained. There are places for great flights of imagination. We like it in a seed catalogue, where we feel there is a bare possibility of our growing something like that picture, but we do not like it in can wrappers. There is too much at stake for us. I have talked a great deal about labeling, but it seems impossible to separate it from advertising, and in a sense it is advertising, I believe. But even if labels could be made to tell something quite definite about the contents of the can, there would still be the task of persuading women to read the labels. That seems to me to be in part the responsibility of the home economist who has direct touch with women and with students who will be the household buyers tomorrow. We admit that the advertiser is already doing much for the buyer that she does not take advantage of. Nevertheless, it is possible for advertising to do a gret deal in this direction.

I believe we need to help women to buy more wisely, more intelligently, perhaps, we might say. Some of them used to be reminded that they cannot expect to get large, whole tomatoes, large halves of peaches in small cans. They need to have their attention called to the fact that different sizes are good for different purposes. Seeing a friend cutting up rings of pineapple to make a fruit cocktail, I ventured to suggest that she might buy the cubed pineapple. "I wouldn't do that," she said, "I never buy anything but the best." Advertising can do something to correct these difficulties by suggesting suitable uses for the different products.

We hear much of standardization and certification, and undoubtedly proper standardization and suitable labeling would simplify greatly the buying problems of the homemaker-consumer. In many instances of nationally advertised goods, however, we have standardization in effect if not in name. Instead of Government specifications A432S, we have a brand name that guarantees a certain quality just as surely as would a government stamp. But it hasn't gone far enough. More of the goods that homemakers have to purchase should be brought to an acceptable standard and labeled in such a way as to guarantee to the buyer that she is getting what she wants.

Not only do we need a campaign for reading labels to know what is in the can, but to know how to use the contents in the best way. In using some of the new canned products directions must be carefully followed if results are to be satisfactory. To be sure, directions should be carefully worked out before they are passed on to the buyer if you would keep her confidence, but in addition she should be encouraged to follow directions. If the product, such as canned chicken, actually only needs to be reheated, long cooking will sometimes make it unsightly as well as spoiling the flavor. Be sure directions are specific and made copious enough to catch her attention.

Some things the buyer ought to be assured of, by legislation or the maintenance of high standards within an industry. She should be able to feel secure against harmful adulterants, against harmless adulterants unless plainly labeled, against short measure and short weight, against misleading labels and inaccurate advertising. In short, our food supply seems to warrant our demanding a rather superior brand of integrity from our food producers and distributors, since taking chances with food is hazardous in the extreme. Many things we cannot expect the woman to observe or test for herself. She must depend upon you to protect her against fraud, misrepresentation and exploitation in many important particulars.

I could spend considerable time in complimenting you on the work you have done, for it has been outstanding because of its thorough-going, reliable, above-board methods. But I shall merely acknowledge it gratefully on behalf of the consumer in passing and add, "Let the good work go on."

There is undoubtedly a place on the household shelf for canned foods in great variety. Tell the homemaker-consumer through your advertising what is to be had, how to use it in new and successful ways, how best to store canned foods, how to care for left-over canned foods, something about the safety of canned foods and what you are doing to make it safer, something more of the social and aesthetic possibilities of food.

Avoid false, misleading statements and trick appeals (I quote the last from the copy-writer mentioned above) if you would have her believe you the next time you want to tell her something. Encourage her to read your advertising, not for amusement, but for honest information. Emphasize the time and effort saved her. Devise methods to enable her to recognize the quality of your product and then make it cost her as little as you can, for the average family pocketbook is still sufficiently lean to cause the household buyer much anxiety.

PRESIDENT COSGROVE: I will introduce to you Dr. Eddy.

The Health Angle in Advertising

By Dr. W. H. Eddy, *Director*

Bureau of Food Sanitation and Health, "Good Housekeeping"

I WANT at this particular meeting to discuss one angle in particular and that is the health angle in advertising. The reason I want to discuss it is that while most of these other speakers have been single-track people I happen to have three jobs, and each job has produced a different viewpoint.

I have spent the last five or six years working on the food value of canned products, with the aid of Dr. Kohman, and parallel with that we have made a considerable study of other sorts of commercial food products. Perhaps some of you, by the way, do not know how that was started. A lady by the name of Delf over in England started it. She reported in a scientific paper that when you boil cabbage on the stove 95 per cent of vitamin C is lost. Before that none of you had said anything on your can labels about having vitamins or not having vitamins. What happened within a short year? From the publication of that statement in an obscure journal, this is what the public received: Cooking destroys vitamins; canned foods are cooked, therefore canned foods are no substitutes for fresh vegetables.

What happened in the end? It was at that time that Dr. Bigelow of the canners' laboratory started to interest me in the

measuring of vitamin values in canned foods. It has been a mighty interesting chapter.

We found, for example, that the thing which destroys vitamin C is not heat but contact with air, that all the heat does is to speed up the rate of destruction. Then when we started to examine your process, we found out of all the methods in the universe of preserving foods, you had the most ideal method for preventing oxidation of that vitamin. Consequently, your products retained better than any dehydration process I have ever seen or any other preserving method the vitamin C value.

About four weeks ago I had the very flattering pleasure of hearing Dr. McCollum say that Kohman's work and ours had been of great value. The same week my wife went to a chain store somewhere around Columbia Hill and brought back the statement that on one of the grocer's counters she saw the statement that Edwin Kohman had proved that canned foods are full of vitamins. (Laughter.)

That last statement came to me with chagrin, but it also came to me with a little shock, because that is just what Kohman and I did not prove. There are a whole lot of things that go into a can that never had a vitamin, and yet we are being quoted by that placard as saying that canned foods are rich in vitamins. Some of them are.

There is another angle to that research. It takes me ninety days to find out, if I have quinea pigs or rabbits, whether you have any vitamin C in a can of anything, and usually about thirty days more to allow both ends of the experiment. I began to hunt around for an improvement on that method.

A Swede in the University of Upsala suggested in 1926 that you might use the teeth of a guinea pig to measure the scurvy protecting value of food stuffs and that the teeth in the guinea pig would show you that result in twenty-one days. That is a quick step so I hopped over to that program. Having worked two years on it, what happened? We have made a very startling discovery in the field of dental nutrition. I can make a guinea pig's teeth go all to pieces inside of twenty-one days; all his dentin is wrecked by depriving him of vitamin C for that period of time. I can measure the difference between 2½ c. c. and 3 c. c. (cubic centimeters) or grams of orange juice in twenty-one days. What happened? Two weeks ago we received from the commonwealth fund of Columbia $105,000 to study dental nutrition and conditions leading up to decay. Because of the work we did on applying this test to vitamin C values we have a big slice of the program. When we get through with our program perhaps you will stop buying certain toothpastes and begin to change your point of view on how you feed the teeth. Frankly, it seems to be definitely evident that much of our resistance to tooth decay comes from the inside rather than from the number of tooth brush applications we apply on the outside.

That is the sort of thing we are bumping into all the time in research. With all apologies to Dr. Dunbar when he talks about not telling the public about some of these health values in foods, I do not believe we would have apple pie today if somebody had not experimented to find new combinations.

Here is another angle. I am teaching nutrition; that is my second job. I am lecturing to students. As I listened to some of the things today I figured that in my text-books and in my lectures I have said more things about spinach than any copywriter has ever been censored for in the time of man. I have an idea that if you read the text-books or listened to the lectures you would find that some of our copywriters have been very mild about what they have said in attempting to teach these things.

Then I come to my third job. I have to pass or withhold approval of food advertising and drug advertising of the "Good Housekeeping" magazine. That does not mean that I sit here and read the magazine and say, "Well, now, that man should never have said any such thing as that about food stuffs. I do not see how he could and be a church member." (Laughter.)

What I have to do is to sit down with John Smith who is a copywriter for one of your products. What have you done with John Smith? You are in business not solely for your health. You are selling goods. You have gone to the advertising agency and what have you asked them to do? You have asked the advertising agency to find out some way of making the public buy not oatmeal but your oatmeal, and if that copywriter does not do it he cannot make his living. Is not that right? He has a job. His job is to find something to say about oatmeal, about spinach, about any commodity that you like which will be unique. What does he do? He searches the literature.

Helen Mitchell at Battle Creek in the laboratory published an article in the Journal of Biologic Chemistry the other day. I will wager some copywriter has it pretty soon. We have been finding, for example, that if you feed inorganic iron to a man he cannot make red blood corpuscles with it, but if you add a small amount of copper or germanium or gamnesium or various strange metals he can utilize it. So what did Helen Mitchell do? She went back and studied spinach. She contrasted spinach with combinations of iron and copper, iron and germanium, and so forth, and she has published a scientific article that spinach worked better than any of the artificial compounds to be gotten. Was not that beautiful copy for the spinach people? What are you going to do with it?

After two years of battling over this censorship, I have worked out certain viewpoints. I have a lot of sympathy for the copywriter who is trying to find a legitimate thing to say about your product. I have a lot of sympathy and desire that he tell the public something about the health values of his food stuffs, because the ordinary advertisement reaches more people than all the schools in the universe will reach. If I listen aright, when I go into the drug stores or the food stores and hear modern mothers discussing cereals and canned foods with the vendors, I find that they are talking about calories and vitamins and not about the mere taste of the inside product.

Your public is health-conscious on these points, but here is my contrast. I hope the day never comes when we say, "Eat Jones' spinach, raised in South Carolina, and your children will never have goiter." That is the absurdity of it. On the other hand, I cannot see why this advertising copy should not state this: That you prepare a good spinach of high quality, tell how it is prepared, and then give the reasons that spinach should be used, the reasons that turnip greens should be used, the reasons that you should use broccoli if you like, or asparagus, and under that a statement of truth.

But when I concede that, then I strike this snag. The copywriter says, "I have difficulties with space and I must abbreviate these facts." The one thing you have to watch, and any man can do it, is to not let your copywriter, in abbreviating truth, imply falsehoods.

I had a row with one outfit that said, "Our food contains the vitamins adequate for normal growth." I made him take out one word—t-h-e. I am still aware that that implies certain things perhaps too strongly, but at least it was the truth. He did have vitamins that were adequate for normal growth, but he did not have all of them.

I do not believe that you and I do not believe that I or anybody else can reach the proper solution of what can be said in explaining the value of canned products or any other products to the public without a large amount of trial and experiment. I am utterly opposed to the idea that everything that is said should be immediately published. I believe our attitude should be one of getting together with the advertising people, but if you are going to get together for good results you must have this sound principle: That what you are going to say of health claims or any other claims must be just as true as what you would expect me to say in teaching a class the food values of spinach or any other food.

If I teach that spinach is a good source of iron for building blood, I do not say that it is the only source. I do not imply that you cannot get it in any other place except Jones' Packing House, but I believe those distinctions are very easily worked out in co-operation.

I do hope that canners will tell more to the public about the food value of canned products. I have trotted around and I have canned a lot of food stuffs and I have the foolish belief that the canner puts into his cans better things than I can buy in any market fresh in this country, for the reason that he plants his cannery where the things grow and to that cannery go the things which the canner selects, and a lot of what is left goes traveling by truck and by rail to the nearest market.

I think quality and real values can be told, but I do not want to see that patent medicine type of appeal carried into the canning game.

The time has been long this afternoon and I do not want to detain you any longer. (Applause.)

PRESIDENT COSGROVE: Gentlemen, I propose a rising vote of thanks to the speakers this afternoon, after which will follow adjournment.

The audience arose and applauded.

The meeting adjourned at four-forty o'clock.

Tomato and Tomato Products Section

Tuesday Morning, January 21, 1930. 10:00 A. M.

W. Earle Withgott, Easton, Maryland, presiding.

THE meeting of the Tomato and Tomato Products Section of the National Canners Association, convened at ten o'clock .

CHAIRMAN WITHGOTT: The first order of business is the appointment of the Nominating Committee for officers for the ensuing year. On that committee I will appoint:

Mr. Carl Scudder, Windfall, Indiana.
Mr. Herbert Harrington, Utah.
Mr. Fred Manet, California.

I believe the next order of business is the report of your Chairman, which will be rather short.

CHAIRMAN'S REPORT

WE extend to you our sincere greetings and trust that 1929 with its golden opportunities, especially to tomato canners to realize a living profit, has included all present. Surely, if we have not it is our fault and not that of the conditions.

There have been, and are, many factory pertaining to the tomato canning industry. I believe keener competition exists in tomato products than in any other canned or even fresh vegetable. The evolution in the production of tomatoes and the outlet of the canned products is analogous to the evolution through which this country has just passed, and I mean also p-a-s-t.

It has been, up until the present time, that practically all our efforts have been devoted to the problems of production in order that the ever increasing population of this country might be satisfactorily and orderly fed. But I say to you with all the power I command, you as canners must focus your guns down other avenues if you wish to continue and to prosper. With the developments of labor-saving devices and machinery, with scientific research producing more tons per acre, we must get in step with progress and devote more efforts toward the distribution and disposition of our finished products.

Without an efficient and intelligent sales organization, you in this day will certainly encounter the rocks and founder. Buying has become an organized branch and so has selling. We must learn the consumer demands and govern our sales accordingly. We must give service, create good will and confidence. Perhaps the buyer can be somewhat passive, but certainly the seller must be actively and truthfully aggressive. I am an optomist and I can see in 1930 a full dinner pail if things are properly handled. The masses who produce, buy, sell and consume goods are the foundation of our business structure. Relatively, very few of the citizenry of the United States were affected by the October crash. The rest will enjoy life, produce, buy, sell and consume as usual, and I want to assure you they will.

May I remind you of the folly which particularly exists in the sale of futures in tomatoes, of selling at or below cost. There was not a time, either during or after the price situation last year, when a price could not be realized which was higher than most prices for which futures were sold, especially some of the low ones from the section from which I come. There is no trouble to sell futures if no price-cutting exists, but the minute price-cutting arises, sales stop. In other words, we should merchandise our goods and not merely take orders.

I have a little report here of what the Tomato Section has done this year. It is probably dry but these figures, when I read them, will be interesting. The Tomato Section, as Senator Tydings will later tell you, has been active.

In May, 1926, the recommendation of a fifty per cent tariff increase was requested from the United States Tariff Commission. In October, 1927, the Tariff Commission began their investigations as to cost, production, and so forth of packing tomatoes and tomato paste, with the result that in May, 1928, a hearing was granted before the said Tariff Commission. Since this time the National Canners' various state associations and members have interviewed the committees of the Senate or the Lower House and various members individually.

The result is that the Lower House of Congress passed a 40 per cent tariff. It went to the Senate and the Senate Committee recommended 50 per cent, where it is now. I hope and believe that 50 per cent will pay us and that the House will concur in the same.

There were imported into this country in 1929 nearly 200,000,000 pounds of canned tomatoes, or, roughly, the equivalent of 14,000,000 dozen of No. 2 tomatoes, which more than doubled the imports of 1928, with a value exceeding 911,000,000. Tomato paste imported in 1929 exceeded 10,000,000 pounds with a value of 21,500,000, or an increase of 75 per cent over 1928, so why not keep this money at home for ourselves? No doubt, tomato juice will also soon be imported into the United States, if not already. Of that I am not sure.

The present tariff on raw and not fresh tomatoes is one-half cent per pound with three cents per pound recommended by the House and two and one-half cents by the Senate, and we hope this will also be raised to three cents, because the imports of raw tomatoes have averaged, over a three-year period according to figures from the Bureau of Economics of the Department of Agriculture, more than 110,000,000 pounds, mostly from the Mexican west coast.

In 1929 there were planted in the United States 285,840 acres of tomatoes which yielded 1,377,700 pounds, averaging 4.8 tons per acre against 3.8 tons in 1928, with a value of $20,420,000. The average price paid per ton in 1929 was $14.92 per ton against $14.17 in 1928. Should the same number of cases per ton in 1929 be realized as in 1928, the pack for 1929 would be approximately 14,000,000 cases of No. 3s, which, when considering that no carry-over was had from 1928, places tomatoes and tomato products in a strong position for 1930.

This will conclude all the report your Chairman has.

We will now get into real business. The first speaker on our program is from Durand-McNeil-Horner Company, one of the largest wholesale grocers in the Middle West, and we are indeed very much indebted this morning to Mr. Robert J. Roulston of Chicago, who will speak to us concerning "Factors to be Considered in the Purchase of Tomato Futures."

Factors to Be Considered in the Purchase of Tomato Futures

By Robert J. Roulston
Chicago.

I ESTEEM it an honor and deem it a privilege to meet with you at this time and welcome you to the Convention City. The subject is rather ambiguous and may be best considered from the point of what the canned foods buyer should know. I will not worry you in an attempt to tell you that which I do not know myself. The span of life is altogether too short to permit the heart of man to cherish the hope, or the brain to conceive that knowledge which a canned foods buyer should possess.

To my mind the canned foods buyer occupies a most important place in our domestic economy. He is the selector and agent provider of the principal products that go toward life's maintenance. Upon his skill, judgment and honesty the health, welfare and physical good fortune of the community largely depend.

A sincere application of his expert knowledge must reflect itself in a way beneficial not only to the consumer, but to the producer of canned foods as well. The very nature of his calling makes him a distinctive cog in the wheel of co-operative methods which the production, manufacture and successful distribution of canned foods necessitates.

In these days of specialization the position of the canned foods buyer is one of extreme exactness. He should possess a knowledge of all food products. He need not be a chemist, botanist or horticulturist; a superficial conception plus an inclination to practicability are helpful factors in the buying of canned foods. His knowledge, like that of the canner, should be practical, not necessarily scientific. I question whether a scientist would make a very good canned foods buyer. I know that a canned foods buyer has no time to be a scientist. His education should come from knowledge by practice and he may never expect to excel unless he profits by this experience.

He should be endowed with gifts of good health, an even temper and unfailing courage to abide by his own decisions and avoid speculation. After many years of canned foods buying I am convinced that it is never too late to buy goods.

A buyer of canned foods should be tolerant and fair. He cannot expect fair and courteous treatment from those from whom he buys, unless he himself is fair towards them; that a square deal is a good rule to buy with, a better one to sell by. Good value and good service deserve appreciation. I have little time and less respect for the overzealous, unfair buyer who fails to recognize that no commercial transaction is right that does not carry with it benefits alike to both buyer and seller.

The canned foods buyer should not only know canning foods, but the districts most favored to the various productions—their method of growth and preparation for canning. Because of the trend toward fashion in canned foods, he should study the public taste, thereby enabling him to better judge what goods will and will not sell. He must be a practical merchant in his line and know how to regulate his stock in accord with demand. He is not a competent buyer unless he knows how to market the goods he buys.

No great measure of success can be attained unless quality in the can is given first consideration. Artistic labels, attractive packages, count for nothing unless backed by contents of merit. I am convinced that high-grade canned foods will soon lead in demand and popularity. In fact, the hope of making canned foods an every meal staple is attention given to their growing, selecting and canning.

Price is secondary, not only with the fastidious rich, but with the economical poor. Every person is willing to pay the price, providing he gets value, but balks at the imposition of a handsome package containing little quantity and less quality.

Right here enters the question of jobbers' label. I am an ardent advocate and believer in the private label. The jobber has a double interest and responsibility in the promotion of his trademark; he is personally known in the territory in which he does business; he is the beneficiary of credit or sufferer from condemnation for goods bearing his brand, and should see to it that his name on a label carries the same measure of good intent and responsibility as when written on a check.

Through careful, sagacious buying a jobber can make his trade-mark one of the most valuable assets of his business. He has the advantage over any manufacturer in that he can draw from the whole country, and thereby secure a better and more uniform grade than the canner who accepts that which nature produces in varying degrees of quality from the district wherein he is located.

The question of jobber's label is one of long standing and much discussion, but now recognized by packers of responsibility generally as being the most economical, satisfactory and reliable way to market their products. To further emphasize this statement, I take the liberty of quoting from a letter recently written by a very prominent canner known to every jobber on this continent, viz:

"We are making a specialty of high grade quality for jobbers' labels, in preference to selling under our factory brands, and we will tell you why. The writer has been in the canned foods business for many years, during which time he has observed and marked evolutions in the branding of food products. He has been a member of associations and committees where packers names on the label proposition has been discussed and urged, and is now and for several years has been thoroughly convinced that the jobbers' label is the logical one for the convenience and edification of the consumer, provided the jobber is particular in the selection of each and every article which is labeled under the same brand. These various articles should be of a similar standard of quality and the jobber should have at least two, and possibly three, brands to run through his entire line. Especially is this true of canned foods.

"We have observed that the successful jobbers are a great deal more particular and discriminating with reference to the quality of product which goes under their label than they are of any product under a packer's label. They simply will not take chances on the quality of goods which they have adopted and given their name. They are jealous of their brands and the quality of goods which goes under them. They take pride in them, as well as in the manufacturer who supplies them. The jobber's salesmen take a like pride in the goods, as do his customers and friends, and they pull together with a view of giving the goods under their brands as wide and extensive distribution as is possible. Now, why shouldn't any packer or manufacturer consider himself more fortunate and prefer to form an association with the jobber and furnish him his highest grade products for the jobber's best label.

"As far as holding the trade is concerned, I claim that any packer packing for jobber's label, who adheres strictly to quality, is much more sure of holding the jobber's confidence and benefiting thereby than if he works against the stream in an expensive, discouraging endeavor to put his own brand forward. Unless supplied with an unlimited advertising fund, he probably will not get very far featuring his own label."

If canners generally could but realize and become imbued with this canner's idea, giving particular attention to quality and uniformity, a better condition would obtain in the canning business. Jobbers doing business in the metropolitan district of Chicago have but little to fear from advertised brands. I think it safe to say that 75 per cent of canned foods sold in this territory are under the private label of the jobber. My firm experienced the past year the largest volume and ratio of increase in canned foods in its history, and I am convinced that this was brought about solely by maintaining absolute quality merchandise.

W. EARLE WITHGOTT

Among the great variety of canning foods none have a more promising future than tomatoes. The taste is natural and of steady growth. Note the reception of tomato juice, not as an appetizer, but fast growing to be a popular beverage, which bids fair to bring the producer of tomatoes in close competition with the orange grower. A heretofore wasted and valueless item becomes a source of news and profitable revenue. Tomato puree is fast displacing canned tomatoes in the preparation of soups, gravies, sauces, etc. Not only with the large users, as hotels, restaurants, etc., but among the family trade as well.

Having found a way to dispose of the juice profitably, it may be that some canner will improve the opportunity, going a step farther, and put out a dry pack tomato. The expression "whole tomato" has no appeal to me. The spaces should be filled with tomato meat, not water juice or puree. Arranging the pack along the suggestions offered, namely, pure juice for drinking, puree for soups, etc., and cans chuck full of red, ripe meat for stewing, may be the means of greatly increasing the use of tomatoes and go a long way towards standardizing and reducing the number of containers, possibly to No. 1, No. 2 and No. 10 tins.

After all the canned foods business is one of confidence—it is buying and selling unsight and unseen. If deliveries are made in full conformity to the contract, the buyer's faith is strengthened. The obligation to retain it rests with the canner.

Canned foods business is good. Demand did not die with the end of 1929. Quite to the contrary, if the first ten days are an index of what's coming, we may expect not only as good business in 1930, but quite an increase.

We are further encouraged by replies to a questionaire mailed our salesmen. "Do you favor future buying on the part of retailers?" The answers were almost unanimous in its favor. Buyers whom we have interviewed as they have called seem to take a more favorable view of future buying, recognizing that in order to keep a constant supply of goods of uniform quality they should anticipate their needs in advance of the canning season.

Confidence and an unswerving fidelity to quality and uniformity are the principal factors to be considered in all canned foods transactions.

CHAIRMAN WITHGOTT: Mr. Roulston, we thank you very much for the timely message you have brought us.

Mr. Gorrell has asked me to read an announcement:

"The Census Bureau sent out schedules the first week in January calling for a report on the stocks of corn, peas and tomatoes in the warehouses of canners and distributors. The date on which the final figures in this survey can be issued by the Census Bureau will depend entirely on the promptness with which the canners and distributors return the schedules. The report to be made by canners should include all stocks of tomatoes held in their canneries or warehouses, including stocks held for future delivery and stocks that have been shipped to dealers on a consignment basis. In other words, the total reported by each canner should represent all stocks of canned tomatoes owned or held by them on December 31, 1929."

We all think we are busy men, perhaps occasionally we are. Our next speaker is a man who has taken his time when he is badly needed in Washington (he just arrived on the nine o'clock train and has to hurry back again on the one o'clock train) just in order that he might come and bring us a message of something in which we are deeply and vitally interested. He is a man whom I have the honor to call my personal friend, a person with whom I had the honor of serving in the same division overseas. He is one of our leading and rising young statesmen, full of energy and vigor, and certainly a bright future, if he can go any higher, is in store for him. In 1916 he went to the Mexican border as an enlisted man, came back as a first lieutenant, went with the first Maryland regiment as a company commander in 1917, went overseas with the Twenty-Ninth Division, returned a lieutenant-colonel and a division machine gun officer. Not being satisfied with that, he came back in 1922, was elected to the Maryland State Legislature and was made speaker of the house. Two years later he was elected to the State Senate, following which he was elected to the lower branch of Congress by an overwhelming majority. Then in 1926 he was elected to the United States Senate, which position he now holds. He has been an ardent friend of the canners, especially the tomato canners, and I take great pride and pleasure in introducing the friend of the canning industry and my personal friend, the Honorable Millard E. Tydings, United States Senator from Maryland. (Applause.)

HONORABLE MILLARD E. TYDINGS (United States Senator, Maryland): Earle got that speech off very well. He recited it exactly as I wrote it and never left a thing out. (Laughter.)

Speaking of the Senate, I am reminded of a story of a teacher who was teaching a class in government. She went on to explain that the Congress was divided into two branches, the House of Representatives and the United States Senate. After she had gone over the lesson pretty thoroughly, she thought, she called on Johnny Jones to see how well he had absorbed what she had been teaching. She said, "Johnny, how many branches are there in Congress?"

He said, "One."

She said, "What branch is that?"

He said, "The Senate."

She said, "Well, the Senate is partly right, but isn't there a lower body than the Senate?"

"No, miss, there is no lower body than the United States Senate." (Laughter.)

Your Chairman asked me to tell you something today of the history of the tomato tariff. Involving, as it does, many figures and statistics, I am forced to read from a manuscript.

History of the Tomato Tariff

By Senator Millard E. Tydings

THE effort to secure an increase of tariff on canned tomatoes is of long standing. For the last four or five years appeals have been made to the President and the Tariff Commission and to Congress to accomplish this result. Many bills have been introduced in the Congress seeking to secure by legislative enactment a special law to take care of the canned-tomato imports.

On June 10, 1927, the United States Tariff Commission commenced an investigation of this subject at the request of Senators Bruce and Tydings, of Maryland, the Members of the House of Representatives from Maryland, and at the request of The Tri-State Packers' Association, the Indiana Canners' Association, the Pennsylvania Canners' Association, the Association of New York State Canners, the Ohio Canners' Association, the Utah Canners' Association, the Canners' Association of Virginia, the National Canners' Association, the Baltimore Canned Food Exchange, and the American Farm Bureau Federation.

In the course of this investigation the various canners' associations in Washington and the Members of Congress had many conferences with the Tariff Commission and in this investigation facts were developed which laid the foundation for an increase in the tariff.

It is only fair to say that the fight to increase the tariff on canned tomatoes was largely won before March 4, 1929, when the present Congress came into being. This Congress has merely given expression to the facts obtained from the Tariff Commission's inquiry.

The investigation of the Tariff Commission covered the following points:

First. The cost of growing tomatoes to be used for canning or for tomato paste;

Second. The cost of canned tomatoes; and

Third. The cost of manufacturing tomato paste.

To secure this information representatives of the Tariff Commission were sent into the field at various points in our country and the data secured were obtained from conditions at Easton, Md.; Bridgeport, N. J.; Albion, N. Y.; Brownstown, Ind.; Kokomo, Ind.; Ogden, Utah; and Sacramento, San Jose, and Los Angeles, Calif. Naturally, due to the varying conditions, the costs of producing and canning tomatoes and manufacturing tomato paste varied in these localities.

The information secured by the United States Tariff Commission is contained in its report to the President of the United States, which, at my request, was printed and sent to all Members of Congress in a pamphlet entitled:

"Differences in Cost of Production of Canned Tomatoes and Tomato Paste in the United States and in the Principal Competing Country as Ascertained Pursuant to the Provisions of Section 315 of Title 3 of the Tariff Act of 1922."

The information in this report is voluminous and presents with reasonable accuracy the conditions in the United States and Italy surrounding the production of tomatoes and their manufacture into canned goods and paste. For example, in arriving at the cost of producing the tomato crop the following detailed costs in the communities I have mentioned were ascertained:

Labor and supervision, contract work, horse work, tractor and truck, plants, containers, fertilizers, taxes, machinery, irrigation, and miscellaneous items.

From this investigation, taking the year of 1926, it was shown that the total gross cost of producing a ton of tomatoes in Easton, Md., was $18.66; in Albion, N. Y., $12.20; in Ogden, Utah, $13.08; and in Los Angeles, Calif., $13.89. However, for the year 1927 the total gross costs of producing a ton of tomatoes in America in Easton, Md., were $14.22; in Albion, N. Y., $10.63; in Ogden, Utah, $14.46; and in Los Angeles, Calif., $14.16. So the commission in arriving at its findings not only considered the factors entering into producing tomatoes for one year but had to consider the cost over a period of years in order to arrive at some approximate average.

The situation surrounding canned tomatoes was found more complex. Here is was found that the canner makes arrangements with local growers for the purchase of their production on a certain number of acres. The canner, having planned to manufacture a certain number of canned tomatoes or other tomato products, knows the quantity of raw fruit needed and contracts for the number of acres he believes will fill this requirement. Consequently, in years of poor crops, insufficient tomatoes are produced on the contracted acreage, while in good years increased yields force the canner to accept delivery of quantities of tomatoes in excess of those needed for his planned production. In some communities approximately 100 per cent of the commercial tomato acreage for canning is under contract. In the important growing sections of the East considerable quantities of tomatoes are grown for the open market because of the proximity of the tomato grower to the large consuming centers. The acreage contract proposition enables the farmer to know before he plants his crop how much per ton he will obtain, and he can form some idea of the value of the enterprise. However, the canner, unless he sells his entire crop prior to canning it at a fixed price, is subject to many situations which he can not foresee at the time the tomatoes are produced. Among these important unforeseen happenings are imported tomatoes which will, more or less, come into direct competition with the domestic pack.

The importation of canned tomatoes has steadily increased, jumping from 11,000,000 pounds in 1922 to 93,000,000 pounds in 1928. Nearly all of these imports come from Italy. Therefore, it was necessary in fixing tariff rates to consider the cost of producing canned tomatoes in Italy as well as in our own country in order that a rate fair to the consumers of canned tomatoes, the grower of canned tomatoes, and the packers of canned tomatoes might be obtained.

In 1926 there were 600 factories engaged in canning and preserving various fruits and vegetables in Italy, representing an investment of $44,000,000. This industry has constantly been expanding and has greatly increased the value of farm lands in Italy. The Italian industry has been encouraged by its Government and all Italian canners are affiliated with the Canning Trade Institute, which provides that canning factories be inspected, fosters measures to encourage the canning industry and to expand its trade, promotes direct dealings between canners and traders, has opened experiment stations to improve the growing of fruits and vegetables and to teach the technic of canning. Under these auspices Italy has seized a tremendous amount of the tomato market in the United States. From 1913 until 1923, the amount of tomato exports from Italy did not increase substantially, but since 1923 Italian exports have increased nearly 300 per cent.

The method of canning tomatoes in the United States and Italy is practically identical. Many Italian producers have bought canning machinery in the United States for use in their Italian plants. In general, however, more hand labor is employed in the Italian than in the United States industries. However, the Italian tomato, because of its shape and small core, is easier to peel and handle than the American tomato.

In the Eastern States of our country and even westward, including Arkansas and Missouri, the tomatoes after having been peeled are sterilized and sealed in cans without the addition of any other ingredients except, at times, salt and sugar. In the far Western States a part of the tomato pack consists of the peeled tomatoes with the addition of a pulp made from the trimmings obtained during the peeling of the fruit.

Canned tomatoes in America are classified in a number of different grades, such as extra fancy, fancy, solid pack, extra standard, standard, standard with purée, and substandard. The Tariff Commission states there is no very definite basis for the grading of the finished canned tomatoes.

On the other hand, Italian tomatoes prepared for exportation to the United States are all of one grade. In Italy the peeled fruit is packed by hand into the cans, and by buyers and packers has been classed as equivalent to the solid pack, extra fancy, or fancy grades of the United States. Hence, the comparability of domestic and Italian canned tomatoes can be seen to involve many, many factors. Our tomato differs in size and appearance from that of the Italian. The flavor of the tomatoes differs slightly; they differ in solids and in sugars.

The commission states that the cost in 1926 of producing one dozen No. 2 cans of grades higher than standards for the year 1926, including the cost of production, the cans, cases, labels, and labor, superintendence, power, water and light, maintenance and repairs, depreciation, insurance, taxes, administration and office expense, and miscellaneous, was in New York $1.03, while the cost for these same tomatoes in 1926 in Indiana was $0.80, in Utah, $0.90, and in California, $0.93. The cost of producing one dozen No. 3 cans of grades higher than standard in 1926 in New York was $1.43; in Indiana, $1.34; and an average of $1.37 for the country. The figures I have cited are the result of investigations made under varying conditions in different parts of the United States and seek to give an approximate average cost to the canner of producing and canning tomatoes as mentioned. The Tariff Commission did not find it practicable to obtain the cost of producing canned tomatoes from the cost records of the canners but used the Italian consular invoices of shipments of canned tomatoes from Italy to New York for the period September, 1926, to August, 1927, inclusive. This analysis covered 76 per cent of the imports of Italian canned tomatoes entered at New York, or 58 per cent of the total imports for consumption in this country.

Italian canned tomatoes, as shipped to the United States, are packed in cases of two sizes. First, 24 No. 3s, and second, 48 No. 2s. The weighted average net content of a dozen cans of domestic tomatoes was 18.7 pounds and of Italian tomatoes, 20.2 pounds. Thus the adjustment called for an increase in the domestic cost of 8.02 per cent. Finally, by making adjustments based on many years of production in the United States, taking into consideration the varying elements of cost in different sections of the country, allowing for the difference in size and weight of the imported and domestic canned tomato and considering freight rates and general transportation costs, the Tariff Commission finally estimated the difference between producing a dozen cans of tomatoes in, say, Easton, Md., and shipping them to New York City and producing the same dozen cans of tomatoes in Naples, Italy, and shipping them to New York City and showed there was a considerable advantage in favor of Italy in that the Italian tomatoes could be put down on the piers in New York City at a substantially lower figure than that at which the local tomatoes could be shipped there. Thus the amounts by which the domestic costs at New York exceeded the Italian are the following per dozen cans. The American producer pays 29 cents more for his tomatoes per dozen cans, the farm cost of production is 28 cents more per dozen cans, and upon these figures the Tariff Commission found that the amount of ad valorem duty necessary to equalize the difference in the cost of production on a basis of, first, price paid by the canner for 1926 required a duty of 27 per cent ad valorem, the farm cost of tomatoes in 1926 required a duty of 26 per cent ad valorem. However, for the year 1927 Italy had a bigger advantage than in the year 1926 and the Tariff Commission found that an ad valorem duty of 34½ per cent was necessary to give the American canner equality with the Italian tomato in New York City.

From the above findings of facts the Tariff Commission summarized its report in the following language: First, that Italy was the principal competing country; second, that New York was the principal market in the United States for canned tomatoes; third, that the duty on canned tomatoes of 15 per cent ad valorem in the tariff act of May, 1922, did not equalize the differences in cost of production of canned tomatoes in the United States and in the said principal competing country; fourth, that the weighted average cost of production in the United States of solid pack, fancy, or extra standard grade, including transportation to New York based upon the price paid by the canners for tomatoes in 1926, is $1.36 per dozen cans; based on the simple average of the domestic farm costs of production of tomatoes in 1926 and 1927 it is $1.40 per dozen cans. Transportation charged for domestic canned tomatoes to New York is practically the same whether it is weighted on the basis of the production covered by the commission's investigation or is weighted on the basis of the shipments which actually move to New York City; fifth, the weighted average cost of production of like or similar canned tomatoes imported into the United States from Italy, including transportation to New York, is $1.07 per dozen cans; sixth, the weighted average of production of one dozen cans of tomatoes in the United States, including transportation to New York, exceeds the weighted average cost of one dozen cans of canned tomatoes imported from said principal competing country, including transportation to New York, by 29 cents, figured on the basis of the price paid by the domestic canner for tomatoes in 1926; and by 33 cents on the basis of simple average of domestic farm cost of production of tomatoes in 1926 and 1927. The commission, therefore, recommend that the rate be raised from 15 per cent to 22½ per cent ad valorem. So much for the findings of the commission.

An examination of the data showed, first, that the growers of tomatoes in many sections of the country were not obtaining costs for their crops. In fact, in places they were losing money. Secondly, the investigation showed that where the American-canned tomato came in direct competition with the Italian tomato that the American canner was at a disadvantage of approximately 30 cents per dozen cans. It is only fair to state that the commission's reports are based upon the findings for two years only and that it is an average finding for the whole country where, as I have shown, the factors entering into the cost of producnig tomatoes and canning tomatoes vary tremendously.

Your representatives in Washington were alive to this fact and made an effort to secure a larger amount of tariff duty than was recommended by the commission. When the bill was passed the House of Representatives it contained a provision that the tariff on canned tomatoes be raised from 15 per cent ad valorem to 40 per cent ad valorem.

The Senate Finance Committee, upon receipt of the House bill, held extended hearings where the representatives of the canning associations were in attendance and requested increased tariffs. Believing, in fact, knowing, that in my own State—Maryland—many canners and growers of tomatoes had passed through several disastrous seasons and that these practical results were even more potent than what may be termed the somewhat theoretical findings of the Tariff Commission, I was glad to have an opportunity to appear and help to obtain a measure of justice both for the grower and producer of tomatoes in this country. The Senate Finance Committee reported the bill to the Senate with a provision to make the tariff on tomatoes 50 per cent ad valorem. When the measure came up for a vote some weeks ago not one Senator spoke against the rate of 50 per cent in the Senate bill, and it passed the Senate without debate and without a dissenting vote. The bill upon final passage by the Senate will go to conference. I feel reasonably sure that both the representatives of the canners' associations in Washington, the canners themselves, and the growers of tomatoes on the farms will be satisfied with the final result.

May I take this occasion to tell you gentlemen who make up the personnel of the various organizations who are interested in this subject that a large measure of the credit for any increase

in tariff obtained should go to and is deserved by your representatives in Washington, among them Mr. Gorrell, secretary of the National Canners' Association, who have left no stone unturned to secure the tariff now in the Senate bill? In my judgment, the fight to increase the tariff on canned tomatoes was won long before Congress assembled. It was the result of several years of untiring effort supported by the findings of the Tariff Commission, and the facts were so overwhelmingly on the side of an increase in tariff duties that nothing but the opportunity to vote it into the law was necessary to bring about this result.

The tariff on tomato paste and the tariff on canned tomatoes is relative. What I have said in reference to the tariff on tomatoes has its relationship to the tariff on tomato paste, hence I will not go into that subject.

In conclusion, let me add that when the present bill becomes the law of the land it may be that the increase in tariff duty will not bring to you all the American market due to conditions which no law can control. It may be that all you seek to gain will not be secured. However, I believe it is accurate to state that this increase of tariff on canned tomatoes is bound to be of some substantial benefit to you gentlemen who are interested in that enterprise and, in my judgment, to some degree it will also assist the grower of tomatoes to obtain a better price for his crop. It certainly will do you no harm, and supported as it is by the findings of the Tariff Commission, becomes nonpolitical and the result of a scientific investigation into this subject.

In the State of Maryland from time to time we have seen canning houses closed because it was not profitable to operate them. We have seen fields of tomatoes rotting because it was not profitable to pick them. May I express the hope that when this bill becomes the law of the land that this condition will either disappear or at least be greatly minimized? At any rate, over a period of several years, commencing in 1923 and 1924 and down to date, it is some satisfaction to know that at least this long contest is approaching a successful conclusion.

HONORABLE MILLARD E. TYDINGS: That concludes what I had in mind to bring to you today as a history of the contest to increase the tariff on tomatoes. I am fairly well supplied with a great deal of information on this subject which I did not put into my remarks, as I know statistics are always burdensome. However, before yielding the stage, may I say that if anyone has a question to ask in reference to the tomato tariff, it may be that I can answer it. If you will rise and let me know what you have in mind, I will try to answer your inquiry if I can.

CHAIRMAN WITHGOTT: I am sure there are some questions you would like to ask and we certainly would like to have you do it. This is the time and place to get the information.

MR. ROACHE (Michigan): I should like very much to have you gentlemen stand up and give this Senator a rising vote of thanks for the information he has given and for the work he has done.

The audience arose and applauded.

MR. ROACHE: He will answer any questions you want to ask. You need not be bashful. We are all interested in the same subject in which he is vitally interested. He has the figures and he will be glad to give them to you. You men from Utah, California, Maryland, Indiana and Delaware had better talk to that man.

HONORABLE MILLARD E. TYDINGS: May I say that I have been greatly honored and privileged to come out here today to bring this message to you. In the audience are many of my personal friends and that alone would have compensated me, but the fine reception and your splendid attention to a rather labored speech of statistics have left me greatly in your debt. I thank you for this opportunity to be with you today. (Applause.)

CHAIRMAN WITHGOTT: I am sure that we are all very much indebted to Senator Tydings for the very enlightening talk and information he has given us. I think perhaps he has missed his calling, that instead of being a politician he should be a canner, because apparently he knows more about our business than we do ourselves.

If you have the opportunity I wish as many of you who can would meet Senator Tydings. You may come in contact with him sometimes and it will do you no harm.

For the last two years we have had as one of our speakers a gentleman from Purdue University, which produced a champion football team this year, so they claim. He has given us a world of information. He has been in direct touch with the buying of tomatoes on grades. That is one of the coming things in our business because we are going to pay eventually for just what we get. We are very glad this morning to have with us Dr. F. C. Gaylor of Purdue University, who will give us some of his experience this year, the third year, in buying tomatoes on grades in Indiana. Dr. Gaylord.

Buying Tomatoes on Grade

By Dr. F. C. Gaylord
Purdue University, Lafayette, Ind.

I IMAGINE, this being my third consecutive appearance before you, it is commencing to get tiresome, so this morning I am going to hit the high spots only in the work of the past year. I am going to leave the rest for some other time.

We have been grading for three years in Indiana. We have graded during that time some 35,000 tons of tomatoes. Last year we had twenty-five inspectors working and we graded 25,000 tons for twenty factories, and those tomatoes were bought and sold on the basis of grades as has been worked out. That means (I haven't the exact figures) that something between 35,000 and 50,000 loads of tomatoes were bought this year on the grade basis.

This matter of buying tomatoes on a grade basis reminds me of Billy Sunday. He said, "It is hard for us to hit the sawdust trail, because it is so much easier to go to hell." That is the reason a lot of canners are skeptical about buying tomatoes on the graded basis. They are so accustomed to buying tomatoes on a flat rate basis that they do not care to think or exercise their judgment and they do not want to make a change, even if it could be proven that there were profits in the change.

With this increased tariff that we are going to get and with the demand for better quality, I am convinced that the raw product is the first essential in packing high grade products, either canned tomatoes or tomato products. I have the figures to prove to you beyond a shadow of a doubt that this is a fact, even if in your own experience you have found it is not true.

I promised myself, if I did not promise anybody else, that I would not make much of a talk this morning. It certainly is not going to be an address. I want to show you some of the averages for the three years and show you the figures and let you interpret them as to whether or not grading in Indiana has been a success. I want to say also before I outline and show you the figures that in the year 1930 in Indiana twenty-five per cent of all the tomatoes that will be bought and used for canning factories will be bought on the basis of a grade, subject to inspection. We have set a limit and we are going to take in only forty factories. We have something now like thirty-two factories. When the fortieth factory is in Indiana we will be through for this year, because I am convinced that the only way to build this proposition is to build it upon a rock-bottom, solid foundation. You cannot do that by overstepping yourself. We have doubled the number of factories each year and we are going to double the number this year. We have obtained thirty-two factories so far without very much advertising. We have to do a little always.

I want to say this, too, which seems to me, without the figures, to be pretty good proof that there is something in this matter of buying tomatoes on grade. We have not had a factory in Indiana which has tried it that has not been sold on it, and some of them have been pretty strong-minded and stubborn. One old canner said that what God put on the vine he would get irrespective of whether it was on a flat or grade basis. He bought on the flat rate and God did not take care of him the way he thought He ought to, so this man is on the grade basis this year.

We have canners who operate three and four factories in Indiana. Some of them tried it out with one factory, and there has not been a company yet which has tried it out that has not eventually used it in all the factories. There may be some proof in that from the canner's standpoint that there is something in this matter of buying and selling on a grade basis.

Personally, and I think the canners will verify me in this statement, the results we have secured and the methods we are using in Indiana have proved that this method is effective. It is a simple, economical, and equitable means of buying tomatoes. It is so simple that if all of us had not been so dumb we would have been doing it fifty years ago. The tomato is one of the last products of which any considerable amount is being bought on the old flat rate basis.

I want to show you something about how this method is worked and what effect on the quantity and quality for all factories it has had where we have tried it out. I also want to show you something about the costs of this as compared with the flat rate basis.

We started in 1927. We tried this out in ten factories. These factories were scattered throughout the State of Indiana. As you will recall, 30 per cent were No. 1s, 50 per cent were No. 2s, and 19 per cent were culls; one-fifth of all the tomatoes bought and sold in Indiana in 1927 were culls. By that I mean they were either green or rotten, and about 75 per cent of the culls

were green tomatoes. That means that between 40,000 and 50,000 tons of green or rotten tomatoes were bought in Indiana. If you mix 40,000 or 50,000 tons of green or rotten tomatoes with some 200,000 or 250,000 tons of tomatoes, you will understand why the quality goes down.

These are the seasonal averages on all the tomatoes graded: In 1928 the average for all the factories was 47 per cent No. 1s, 47 per cent or a little over No. 2s, and 5 and 3.9 per cent culls. You will note that we dropped from 19 per cent to 5 per cent culls. We started by eliminating the green and rotten tomatoes, because when farmers found that it was not paying them to bring in that kind of tomatoes and that they were going to get paid on the basis of the kind of tomatoes they delivered, they quit delivering green and rotten tomatoes.

In 1929 we increased the percentage and these years have been quite similar in many respects, and 1929, perhaps up to the frost, was a little better than normal. We ran along into October and then had a frost that knocked all the leaves off the vines. In 1929 after we had educated twice as many farmers and inspectors, we increased the percentage of No. 1s to 50 per cent for the season, decreased the No. 2s to 35.8 per cent, and decreased the culls to 3.19 for 25,000 tons of tomatoes. In other words, out of the 250,000 tons of tomatoes these factories received in 1927, 5,000 tons were culls. In 1929, these twenty factories received 2,750 tons only. More important than that, the culls received at these factories in 1929 were marginal tomatoes, no real green tomatoes or no real rotten tomatoes, but tomatoes on which there was some question as to whether or not they were culls or No. 2s. They were a little too good for culls and rather low for No. 2s. These first ten canners bought 5,000 tons of culls in 1927, and in 1929 these twenty factories received 2,750 tons of culls.

Now you want to know whether or not it costs more money. I want to tell you that the buying of tomatoes on the grade basis is the cheapest thing that ever struck Indiana. I have the figures, but I am not going into complete details now, but I shall be glad to show them to you at any time.

* * * *

That does not half tell the story in regard to cost, because in no instance has a canner in Indiana ever been able to cut out the green and rotten tomatoes on the flat-rate basis, and I base my figures upon fifty years of canning experience. Instead of the tomatoes on the flat rate getting better they have been getting worse, so in this figure of $13.40 I have given the flat rate the advantage of all the benefits that have accrued as a result of the grading proposition.

This year the cost of a full ton of tomatoes has not increased very much—$14.18. You will notice the difference in the quality of tomatoes we are receiving. We have eliminated the culls, we have increased the percentage of No. 1s, and we are getting much better tomatoes than we have had heretofore. I am going to show you that by some color charts that I have.

The farmer is getting more money, and the cost per package in Indiana per case of tomatoes is less than what it was under the old flat-rate basis. I want to take one or two examples to show you the effect it has had upon certain individual factories that we have run for three years. For instance, factory C in 1927 had 25 per cent No. 1s, 35 per cent in 1928, and 54 per cent in 1929. In other words, we doubled the percentage of No. 1s in three years. Look at the culls. In 1927 they were getting 10 per cent culls at that factory. We dropped to 7.02 in 1928 and reduced it so that the seasonal average at that factory was 1.57 per cent, less than 2 per cent, culls for the entire season, in 1929.

Take factory G. They had 11 per cent No. 1s in 1927, 50 per cent in 1928, and 53 per cent in 1929. In 1927, 32 per cent of their tomatoes were either green or rotten. We cut that down under the grade basis in 1928 to 14.5 per cent, and to 4.5 per cent in 1929. I do not think these conditions in Indiana were any worse than in many other places. The figures for each of the twenty factories in which we worked in 1929 show the same slant of reduction in the percentage of culls and the increase in the percentage of No. 1s.

We had two factories in Indiana last year that reduced their culls for the season so that one had .53 per cent and the other had .57 per cent for the entire season, which I think is really remarkable. I had never hoped to be able to reduce the culls to that point. I have always figured that if we could get down under 5 per cent for all factories for the season we would be doing pretty darn good. We have reduced culls to a very low point and in a good year I am sure we can practically eliminate all cull tomatoes. So much for cutting down the culls and the cost.

I want to say something in regard to the quality of tomatoes. Dr. John MacGillivray of Purdue Experiment Station has been working for five years on this matter of quality and color, and he has worked out, in co-operation with the United States Department of Agriculture, a rather accurate system of measuring color, so that we can definitely tell what we are getting in Nos. 1s, 2s and culls.

Last year we ran a lot of color analyses on Nos. 1s, 2s and culls. Dr. MacGillivray uses three terms or three degrees to express this measurement of color, the same as they are doing at Washington—hue, value and chroma. Hue is the redness of tomatoes as compared with the yellowness of tomatoes. Value is the whiteness and blackness and does not enter into this. I am going to consider the hue and the chroma. The chroma is the strength of the color, whether it is a bright red or a reddish gray.

Of course, in tomatoes we want a bright red. In terms of hue and chroma the ideal tomato color would be a hue of five and a chroma of thirteen. If placed on this chart, it would be in this corner, something a little bit brighter than this. This has a hue of five and a chroma of twelve. A tomato a little redder than this would be in there.

The reason I have no more of those charts is that I am not able to buy them. They cost $20 apiece, and as the Experiment Station is always out of money, four of them were about all we could muster enough money to pay for.

CARL SCUDDER

We made a number of tests on measuring colors of Nos. 1s, 2s and culls. For this meeting I could not get our chart man to make all of them, so I picked out just one which is representative of all of them. The complete test will be found in our new bulletin which will be ready shortly. Remember that a hue of five and a chroma of twelve or thirteen would be very fine quality for a tomato.

For our samples we took the tomatoes after they had been graded by our inspector and ran them through a small cyclone that we built and tested the color immediately. We found, for instance, that in the No. 1 the hue is 5.69 and the chroma is 12. The average color of our No. 1 tomatoes was about as good as this one. In the No. 2s the hue was seven and the chroma was ten. The hue of the culls was twelve and the chroma was five. The small number in hue indicates quality and the large number indicates lack of quality, lack of the color or the redness that we want in tomatoes, and the reverse is true in chroma. Thirteen is the ideal in chroma and as you drop down you get a poorer or a weaker color.

You will notice that this goes exactly as we had expected: No. 1, fine color, the hue is fine, less in the No. 2s, and poor in the culls. In the chroma you have very strong red color, and very poor here. You can get some idea of how good this tomato is here by the fact that of the thirty-four samples Dr. MacGillivray tested last year bought on a flat-rate basis the average was eight hue and ten chroma. In other words, our No. 2 average sample tomatoes were better than thirty-four average samples taken at random through the season. Our No. 2 tomatoes received on the grade basis last year were a little bit better than the average sample being received in Indiana on a flat-rate basis. That is not fiction; that is fact.

There is another interesting piece of information on that shart. You know that the amount of pulp you can receive from a ton of tomatoes depends on the dry matter, because you have to boil out the water to get your concentration down. We took sample measurements of the dry matter and found that the dry matter in this No. 1 sample was 5.49. In the No. 2s the dry matter was 5.15, and in the culls it was 4.94. You can see that a ton of No. 1 tomatoes will make more pulp than a ton of 2s,

and considerable more than a ton of culls, if you throw out the matter of color altogether.

We turned that over and put it on the basis of No. 10 cans. No. 10 cans contain 1.045 pulp; 1.045 is a little more concentrated than Campbell soup contents. We figured 1.045 because that was easier for us to handle. The sample I have here was taken at one of our factories. We took at random 500 pounds of No. 1s and 500 pounds of No. 2s. They were saved from various sample loads. We tested the percentage of solids, and the percentage of solids was 4.76 in the No. 1s and 4.20 in the No. 2s.

This test, I might say, was made at the end of the season. We found that tomatoes get worse at the end of the season. We got 128.4 No. 10 cans of 1.045 pulp, figuring 6.65 pounds to a can. Using No. 2s, we got 113.4 No. 10 cans of the same concentration. We got 15 cans more of pulp out of a ton of No. 1s than we did out of a ton of No. 2s. We also took varying percentages of Nos. 1s, 2s and culls. As the farmers brought in loads of tomatoes, we took loads that had a high percentage of No. 1s and a low percentage of No. 2s and culls, and we also took loads that had a small percentage of No. 1s and a rather high percentage of No. 2s and culls, and we found that the same thing was true: That the color and the quantity of pulp and the specific gravity ran in direct proportion to the number of No. 1s and the percentage of culls in the particular samples.

I have a lot more figures that I could show you, but I am not going to take any more time. I feel that it will pay anyone who is interested in quality to investigate this new and better method of buying tomatoes. It reminds me of a small girl who was found at the zoo.

For you farmers and canners, particularly you canners this morning, who have been buying tomatoes on a flat-rate basis, I believe there is no question that this method will help to solve the raw products end of the game. I might say that we have found that our good farmers are delighted to be able to get more money for the kind of tomatoes they are delivering. At the new factories, after the first week we have never had much trouble.

You might be interested in knowing that the cost of operation of the grading system in Indiana has run all the way from twelve cents up to beyond sixty cents per ton. There is no reason, if a canner has 325 acres or more of tomatoes, that he cannot operate this system at around twenty-five cents per ton. The cost of operation, so far as we are concerned, depends altogether upon your tonnage. As your tonnage goes up the cost per ton goes down, necessarily. It always costs more for a small canner, because our inspector can grade more tomatoes than a small canner will have delivered on any one day. We have found that an inspector, with a helper, can inspect between 125 and 150 loads a day at the peak of the season.

Mr. H. G. Maxson, Monterey, California, took the chair.

CHAIRMAN MAXSON: This has created a great deal of interest. I had a wire this morning from one of my associates to go into this matter very thoroughly. I am going to ask Mr. Scudder to please lead the discussion. I am sure there are a great many questions we want to go into.

MR. CARL SCUDDER (Windfall, Indiana): I will certainly be very glad to answer any questions. In the beginning I am very pleased to say that we started with one factory on the grading system, and all our shipping stations and factories are on this basis now, and we certainly would not operate on any other.

Grading tomatoes is not an experiment; it has been in operation for more than three years and is very successful. In discussing this problem it must be considered from the viewpoint of those affected. The parties interested in the canning of tomatoes are, first, growers; secondly, canners; and thirdly, the consumer. The effect of this has just been thoroughly explained by Professor Gaylord, who has spent a lot of time getting this program worked out. There is nothing to be added for the good points of this system. There may be some objections, and if so, we might discuss them.

It is very gratifying to us to know that the system has been pleasing to our growers. We have never lost an opportunity to ask that if you were to gain a profit from this to whom would you like to pass a part of this profit? Certainly your grower who takes a lot of care of his crop is entitled to the same consideration, and there certainly is no better way to give him a very substantial profit than to give him a very substantial premium for his No. 1 grade. After the men who are to do this grading have taken their training in the grading work, they are fairly competent to exchange prices, and that breeds very little dissatisfaction, if any, among the growers.

On this point there is a very extensive requirement of the canners. First, he must be so thoroughly sold on the proposition that he is willing to stand by the grade under all conditions, bad weather and good, sunshine or rain, because it is positively necessary that the standard of grade be maintained if the system is to be worthwhile. From the canner's viewpoint there certainly could be no objection, as the quality of the tomatoes delivered is much better. There may be some variance in the grade at times, but that is not desired. It is generally presumed that the No. 1 grade of tomatoes from the field will be extra-standard or fancy when canned. However, there is a chance of the color of the tomato looking red enough to go in grade one before peeling and afterwards being too light for extra-standard or fancy. To be sure, the method of handling in a trip through the factory has an influence on the final grade of the cans. I merely inserted this because I knew the Professor would make objections.

We mark some tomatoes, going through the grade in the regular way, with some adhesive tape and watch them go through the plant, just to see what the real effect is and what the quality is at the end of the process. It may have been that some fault in our line-up was the cause of this change in the tomatoes, but the inspector was not always able to tell just exactly what it was going to look like at the end of the process.

The elimination of cull tomatoes is of vital importance to the canner, and the grading system eliminates this to a large degree. It is very difficult to convince your growers when tomatoes are purchased on a flat-rate basis that you are not using the culls, and it is a difficult task for the canner to sort out these.

If you will look at the problem from the consumer's standpoint, the housewife today is looking for better goods. Tomatoes have become a part of the daily diet and they want good tomatoes. So long as we permit growers to bring poor tomatoes into the field, so long will we be unable to put out good products.

Everybody is concerned up to the present time, so a system has been worked out which more nearly meets the requirements of everyone affected and that we as canners can recommend.

Gentlemen, it is difficult for me to decide what you might be interested in from this proposition. It has become just such a part of our organization to the extent that we do not think in any other terms, because the advantages are so great and it works so smoothly. It is quite as big an advantage as to have a man from the United States Government around your plant. It lends a lot of unity to the affair.

No doubt, many of the canners with whom we have been associated are thinking in their minds that, well, this inspector is not prominent and there is a lot of graft in this thing, that the growers can influence him. There may be some chance of this, but it has been so small in our experience that we never consider it at all. These boys who have been doing the work are just the finest young men you can imagine. Most of them are college boys, and it is surprising indeed to see how well they get along with the farmers. Our farmers in Indiana are no different from what they are in other places, and that was one of the first things that interested us, the fact that our growers really did appreciate this.

I can imagine the pride that a grower has in bringing in a load of tomatoes, if you happen to be paying on $10 and $18 as we have been in the past year, and having that load of tomatoes bring him $17.92 a ton, which was our high price, but he can do it and he should have this additional price as we see it, if he will take the time and trouble to bring you in No. 1 tomatoes. As the Professor has shown you here, it really didn't cost you as much for the actual pounds of finished product that you got out of it as if you were paying some $12 or 13 and taking all the tomatoes from the vines.

With these general statements, if it is agreeable to you, I prefer to answer questions if they have any, Mr. Maxson.

CHAIRMAN MAXSON: Mr. Scudder, I should like to ask you how the grading is done, that is do you take the size or the color?

MR. CARL SCUDDER: At each of our plants we have provided a grading shed back of the scales, so that you can have some loads that have been graded ready to go up to the factory. The grower drives up with his load, regardless of the number of baskets or crates, and then the inspector takes three of these containers and pours the tomatoes out on an especially constructed table with three compartments, putting the No. 1s here, the No. 2s here, and the culls here. He has some baskets sitting on scales. He simply raises up the table and the tomatoes run into these baskets and he reads the weight and puts that down. I do not know whether that quite answers your question.

CHAIRMAN MAXSON: What would constitute a No. 1 tomato?

MR. SCUDDER: I think with your permission we had better let the Professor recite that.

DR. GAYLORD: Perhaps you are not acquainted with the grades as they have been worked out. No. 1s are what you

would think of as fancy tomatoes. They must be red ripe, without any considerable amount of blemishes on them, and without any size requirement. We have not used size in Indiana because our flat-rate tomatoes run pulp and canned tomatoes in the same quantity, and a ton of small cull tomatoes will run just as much as the larger tomatoes.

No. 2s are red ripe, in the first place, but they may have a green collar around the top, a little sunburn on them, and they may have as much as 10 per cent waste. They may not be just quite ripe, and yet they are not green. In other words, they are a merchantable tomato that will make a very standard product, either canned or in tomato products. They are the kind of tomatoes that a lot of them grow and cannot grow any others. They are worth something. They are fit for consumption, so the farmer brings them in and the canner buys them. It is pretty hard to tell you what a No. 1 and a No. 2 are, but it is easy when you have the tomatoes to show, and it is easy to train our inspectors with regard to No. 1s, No. 2s and culls. That is the way we run our training school. We educate them not by telling but by showing them and making them do the same thing to see if they really know their stuff.

MR. SCUDDER: The culls are either green or rotten.

DR. GAYLORD: They are not fit to be used in any products.

CHAIRMAN MAXSON: I was more interested in the size.

DR. GAYLORD: In some states where they can tomatoes they operate on a size option, that is it is optional between the canner and the farmer. All tomatoes red ripe under two inches would be in the No. 2s.

MR. SCUDDER: I said these inspectors could be changed from one factory to the other with no dissatisfaction, which is absolutely true. We changed inspectors at one factory four times, not through any fault of the inspector or anyone else. When we changed, the grower went right ahead and we could see no difference in the tomatoes as they came through. I think that means a lot to the system.

MR. PRESTON McKINNEY: Do you grade all the tomatoes or do you make a test grade? If a load of tomatoes come in with fifty boxes on the load, how many do you take down?

MR. SCUDDER: We take three boxes, regardless of the size of the load. The grower must be satisfied that that is a fair percentage on these loads.

DR. GAYLORD: We have never had a farmer who was really dissatisfied with the samples. In all our experience we have never had any trouble with the farmer being dissatisfied with the grade, because we educate our inspectors very thoroughly that we are going right straight down through the middle of the row. We are giving nothing to the canner and we are giving nothing to the farmer, but we are giving everybody a square deal. We maintain the system right straight through and we have established the confidence of the farmer in that.

MR. SCUDDER: We provide so that he is satisfied.

MR. FRANK M. SHOOK (Tri-State Canners Association): Your great change in reducing the percentage of culls did not mean that those tomatoes were left in the field at all. They were not wasted for the farmer. Instead of picking it green today and having it graded as a cull, the farmer left it until the next picking, so that he did not lose the nineteen per cent of tomatoes this year simply because of the percentage of culls.

MR. SCUDDER: We feel and the grower feels that his yield is better on a graded basis than it is on the other. We have no way of measuring because you cannot do both. You have to leave them or not leave them. They are all satisfied with it, at least.

MR. V. V. GRECCO (San Jose, California): Is your picking done by contract at so much per ton or by day labor?

MR. SCUDDER: There is mostly piece-work in that. A number of our growers has gone to the graded basis on picking. We are also on the graded basis in peeling. We grade right straight through into the warehouse. They will pay one dollar a ton more for picking No. 1s and we are on the percentage. In other words, they take the weight slip as graded by the inspector for the whole thing in settlement with the pickers. They are either No. 1s or No. 2s so far as the three boxes are concerned.

MR. STRINGHAM (Utah): I should like to ask what quantity of tomatoes in a loading station a man is able to handle. We have three plants and a number of loading stations where we receive tomatoes. I wonder how much it would be possible for a man to receive at each of these stations.

MR. SCUDDER: One hundred tons a day is a very nice average for the average inspector. Sometimes on a big run, such as that, you have to furnish him a helper to take the crates off the wagon and sort them out. The inspector does all the grading. He merely has a helper to help him take them off the wagons and put them back. One inspector can take care of 100 or 150 loads a day, nicely.

MR. MONTELL (New Jersey): How long does it take an inspector to grade?

MR. SCUDDER: That depends on how the tomatoes are running. If they are of a good grade he can put them in a No. 1 pocket in a minute or two.

MR. MONTELL: Five minutes to a load?

MR. SCUDDER: That is not necessary the way we operate, because we will have four or five loads between the grading shed and the scales, so that we can keep going always, and he just works along as they come in from the field.

MR. HERBERT HARRINGTON (Utah): Would it be a fair question to ask you how much your inspectors cost you?

MR. SCUDDER: Fifty dollars a week. The Experiment Station takes care of all the expenses out of that $50. They pay the inspectors and buy supplies in addition to that. There are certain weight tickets you have to have because the government signing this, and they have some requirements that must be met.

F. M. SHOOK
Secretary, Tri-State Packers.

DR. GAYLORD: It is a Federal-State proposition. The State hires them and fires them and the Federal Government issues the license. In Indiana we do not have a Bureau of Markets nor a Department of Agriculture, except around the state fair. The Experiment Station at Purdue University does all the recording work in Indiana. We have devised this system and we have trained the inspectors.

MR. PRESTON McKINNEY: Who pays the $50 a week?

DR. GAYLORD: We pay the supervising inspectors who go around to check the load inspectors to see that they are doing their work properly.

MR. BARNES (Utah): You have not answered the question. The question is who pays the inspectors.

DR. GAYLORD: We pay the inspectors but the canners furnish the money. The canners pay us $50 for inspection. (Laughter.) We operate at cost.

MR. BARNES: I am not objecting to the cost, but it would be prohibitive. In our two little plants it costs us about $2,000 a year. I do not believe we would get value received for it.

DR. GAYLORD: How many tons do you contract for?

MR. BARNES: We get close to 7,000 tons.

DR. GAYLORD: How much is your biggest day's run?

MR. BARNES: That I could not tell you.

DR. GAYLORD: Would it run over 150 tons a day? Do you operate more than one factory?

MR. BARNES: We operate two factories.

DR. GAYLORD: Would you get more than 150 tons a day in the two factories?

MR. BARNES: Yes.

DR. GAYLORD: In Indiana the price of culls alone pays for the inspection system. I do not see exactly where you get your $2,000, that is $1,000 for each factory.

MR. BARNES: We have at least two factories and four receiving stations.

DR. GAYLORD: I do not know the Utah conditions, but it seems that you are not getting enough tomatoes in each of your

receiving rooms, or else you are getting more than 150 tons a day. From the tales I hear of Utah, it would be easy. Cut down your loading stations.

MR. BARNES: The only reason we do not cut down our loading stations is that Mr. Harrington would slip one in on us.

DR. GAYLORD: One canner suggested that if it cost you $2,000, that would be thirty cents a ton on that proposition.

MR. GRECCO: In a fairly large factory, do you need more than one inspector?

MR. SCUDDER: No.

MR. GRECCO: Do you have a weigh-master besides? I understood you to say the inspection is done mostly by college students.

MR. SCUDDER: The inspectors are men who have had experience, if possible, in the tomato business. Some of the inspectors have been growers who were not farming at the time and were out of a job. The first year we had some apple men from the East and they worked very nicely. The problem of learning how to grade is rather simple. It just takes a fellow with good common sense and who is not afraid to work a little and someone who is not going to get into a fight with your growers right away. That is the big secret of it. So far as actually doing it is concerned, it can be done very easily.

DR. GAYLORD: We would rather have a young man between nineteen and twenty-five who knows nothing about tomatoes.

MR. GRECCO: While we do not buy on a flat basis in California, we buy on a graded basis that might be different from your basis. Our contract calls for No. 1 tomatoes. The tomatoes upon reaching the canners are inspected and those that are not No. 1 tomatoes are weighed back and we do not pay for them at all. How does that plan differ from your plan, if at all?

MR. SCUDDER: In our State we have a number of factories where wo do weigh back. It is very satisfactory. This system is just worked out simply as one way of doing it. The other is entirely satisfactory. The advantage, we think, over all these other plans is the fact that you have the government behind you and it really is something definite. Your own men in the system that you use, as we see it, are just about all that you have.

PRESTON McKINNEY: We have a complete system, too, but it is state rather than federal. We have a crew of fifteen men during the season, and sometimes we have a crew as high as twenty-five. They are all employed by the state, financed by us, and trained in somewhat the same manner as yours. It is all state inspection.

MR. SCUDDER: That certainly should work better. Where the canner employs the inspector, he does not get along so well, because you do not have a system to go by and it is not uniform.

MR. HARRINGTON: What do you do with the culls?

MR. SCUDDER: They must go through the plant.

MR. HARRINGTON: You do not give them back?

MR. SCUDDER: No, the grower does not get them.

MR. HARRINGTON: The canner could use them, then.

MR. SCUDDER: We hope not.

MR. SILVER (Maryland): What is the price of culls?

MR. SCUDDER: Our particular place pays $10 for No. 2s, and $18 for No. 1s. Some of the boys paid as low as $9 and as high as $20, but nothing for culls. That is quite uniform practice.

MR. MONTELL: I heard Mr. Scudder say something about our Eastern boys. In the East, heretofore, we have tried the A, B and C plan or the No. 1 and No. 2 grades, simply classifying the entire load as one or the other, or as one of the three. We have found that one of our farmers possibly would have a picking of 500 baskets, or two or three loads in line, and when he came to the graders, one grader might put one load in an A classification and another grader might put them in a B classification, and great was the controversy thereof to determine whether both should have been B or both A. We had a lot of difficulty with it. I wondered in working on this United States proposition if the same might not be true, if a farmer brought in a load and it graded, we will say, as that chart shows for 1929, 51 per cent No. 1s, 48.8 per cent No. 2s, and 3.9 per cent culls and his next load graded 47 per cent No. 1s, 47 per cent No. 2s, and 5 per cent culls, would he have the same objection? Would he be hard to satisfy?

MR. SCUDDER: Up to the present time we have not experienced that. When you first begin in the season or begin in a new plant, it takes two weeks to get the boys educated to what you want and what is most profitable to them. Our growers are all to the point where they can figure what is going to bring the most money before they start in with their loads, and we do not experience those things. We have some objections occasionally but they are so minor that they really are not objections.

MR. MONTELL: Even though all your loads come from the same farmer, they are somewhat different.

MR. SCUDDER: Naturally they would be because of the different parts of the soil and the different parts of the field. That would make a difference. With a big yield, the grade will run very uniformly. Take a man who is getting fifteen or twenty tons of tomatoes to the acre, his grade will run more uniformly than the fellow getting five or six.

MR. HARRINGTON: Carl, how did these grades run after they went through the factory and you received them in the finished product? Did they run about the same proportion? In other words, when you picked out the culls and threw them away, did your loads show a greater amount of culls than when you put them through the plant, or did they run about the same?

MR. SCUDDER: If the Professor will promise to keep quiet I will tell you the fact in this case, because he and I have argued for four long weeks trying to decide that and we still have another session on it. I will tell you the truth in this case, Mr. Harrington.

I have not been able to see or prove by figures that it is in direct proportion to the No. 1s, and that is why I made the general statement in my first remarks that there might be something in the process of going through the factory that makes some difference. The only argument that he has against me is the fact that he always has that comeback that we did not handle them properly or they would have been No. 1s when they got back in the warehouse. I cannot see in a commercial way where it is going to be in direct proportion to No. 1s.

MR. HARRINGTON: I can see where Mr. Grecco takes out the culls and hands them back to the farmer that the No. 1s are exactly the same. When you bought a load and there were so many culls I wondered what proportion the culls ran to the price you paid.

MR. SCUDDER: As far as culls are concerned, I think that is possibly true, but No. 1s might go into No. 2s. That depends somewhat on what your standard of tomatoes in the can may be. In other words, if you are going to have a perfect tomato when it goes in the can for your fancies, which you should have, then you might drop some of those No. 1s into the No. 2s. It is hard to draw a line and say that this will be a No. 1 from the field and a fancy in the warehouse. It does not seem to me that that is absolutely true.

MR. HARRINGTON: Tomatoes may look very red to an inspector when inspecting them before they are scalded. but when they go through the scalder and come to the woman who is peeling them, those tomatoes may look a little lighter, and they may go over into the No. 2s.

MR. SCUDDER: We have not decided whether the heat might make some difference. We have marked a number of tomatoes with adhesive tape and have watched them go through to be peeled in the regular way.

DR. GAYLORD: I should like to ask for permission to ask Mr. Scudder a question. If a farmer brings in a load of tomatoes that runs 90 per cent No. 1s, 8 per cent No. 2s, and 2 per cent culls, and another farmer brings in another load that runs 40 per cent No. 1s, 50 per cent No. 2s, and 10 per cent culls, can Mr. Scudder see any difference in his factory operation in the percentage in the can in those two instances? If he will answer that, then I will not need to argue with him any more. (Laughter.)

MR. GRECCO: I want to correct a misunderstanding. Mr. Goebel—

MR. HARRINGTON: I rise to a point of order. That man Goebel has been representing me around this convention. He said he was called Harrington eleven times yesterday and that he wanted it stopped.

MR. GRECCO: We both made an error. I did not say that the culls were returned to the grower. However, it is optional for him to take them back if he wants to, but in order to take them back he has to sort the entire load. Of course, in the canning operation we cannot use them because if we put them in the cans we could not sell them, so in the process of manufacture these culls are thrown out. There is no question about that.

MR. SCUDDER: We do have some factories that return them as they go over an inspection belt.

MR. MONTELL: Do you figure the spread in price between $18 and $10 is equitable, or from your experience would you deem that it should be changed?

MR. SCUDDER: That is merely a matter of opinion, and my personal opinion is that it is right. I see some of my good friends from Indiana who do not believe that way at all. Consequently, I hesitate to say that is correct. We are very much sold on the idea of making a wide spread between 2s and 1s, due to the fact that we want No. 1 tomatoes to be No. 1 tomatoes. All the grower has to do is to leave them in the field a few days longer and he will have No. 1s. Consequently, we prefer to give a bigger premium on 1s and a lower price on 2s.

MR. MONTELL: Would you be willing to pay $17.50 if you got nothing but 1s?

MR. SCUDDER: Yes. We do not care what the price is. We can go to $20 or $25 a ton, because the dry matter and the color is enough to take care of that. If we could get the No. 1 tomatoes all the time that we do get in Indiana we would not be selling 2s at 80 cents. We have some No. 2 tomatoes at $1.10 and $1.25. In other words, the percentage that the raw stock bears to the total cost is not so great, because there are a lot of other items entering in.

MR. SHOOK: In discussing this with Dr. Gaylord, due to the fact that No. 1 tomatoes do not always make fancy stock in the cans, is it your contention that you should raise the standard? That should be just a little more reasonable now under United States grade.

MR. SCUDDER: From our experience, I would not say that it needs to be changed any. We are perfectly satisfied with what is going into the warehouse from the grading, but to say that it is in direct proportion I am not ready to say just yet. I suppose I will still be arguing with Professor Gaylord a year from noy, because that is all we have done.

At the same time, he has a lot of figures to show that there is a wide difference. Your yield on pulp and paste is quite an item to enter into it, too.

MR. SHOOK: I think the price in handling graded tomatoes as against the flat basis has not been brought out. I visited several of your plants this fall when you were canning. I think several canners said that where they bought on the graded basis they saved a lot of labor in sorting and picking on the belt. That saving in labor more than offset the inspection in your yard. That is claimed by two or three of your Indiana canners with whom I have talked this year. Where they formerly had twenty men or women on the belt picking over the tomatoes and paring off the spots and paring out the green, they reduced that to seven or eight persons a day who handled the same amount of tomatoes if bought on the graded basis.

I want to say from my observations during a three-day trip in Indiana this year that when I drove up into a man's yard and looked at the baskets in the yard, I did not have to ask Dr. Gaylord whether he was buying on the graded basis or the flat basis, the tomatoes spoke for themselves. Where they were buying on a graded basis there was quite an improvement in the raw stock.

MR. SCUDDER: We were delighted to have Mr. Shook, Secretary of the Tri-State Association, call at our plants, and we will be glad to extend the same invitation to any of you who care to come. There are no secrets in the canning game, anymore. We will be very glad to show you the figures and to let you examine the work for yourselves whenever we are packing, because we will be grading at all the plants and at all the stations.

MR. HOAGLAND (Indiana): Indiana is by far the greatest tomato State in America. (Laughter.) I imagine they would like to know why we cut down our factories on the graded basis to forty.

MR. SCUDDER: The only reason for that is the lack of Purdue University being able to take care of any more.

DR. GAYLORD: I do not believe in rushing into things. You know, it is a big problem to educate canners in Indiana. (Laughter.) That is with all due respect to my hundreds of friends in the Canners Association, because I have more friends among the canners, perhaps, than any place else. After these canners have been buying tomatoes on a flat basis for twenty or thirty-five years, it does not go over so well for a young fellow like me to tell them something about running their business.

We have to educate the farmers and we have to educate the canners. The farmer has been accustomed to selling vines and everything in Indiana. We have to educate him, after the canner has ruined him for all these years, as to what quality really is in a good tomato. We have to train these inspectors. It is a big job to double an organization each year, but that is what we have done this year. We have decided that we have to go slowly, so that is the reason we have placed the number at forty.

MR. GRECCO: Why did you say "educate the grower and educate the canner and train the inspector?" (Laughter.)

CHAIRMAN MAXSON: Are there any more questions, gentlemen?

Professor Gaylord and Mr. Scudder, I want to thank you on behalf of everyone present. This was very interesting and very, very instructive.

We have another subject which is up for discussion that is a very, very interesting one, and I hope it will be as instructive as the last. This subject is on the simplification of containers.

I am going to ask Mr. Shook, Secretary of the Tri-State Canners Association, to lead the discussion.

MR. SHOOK: Mr. Chairman, I cannot tell the canners very much about the numerous sizes of cans they use. They know that better than I. I had occasion a few days ago to try to convert the report of packs of Tri-State tomatoes into No. 3 cans and had in my reports from Tri-State canners at least eight sizes of cans about which I knew nothing. I called up Mr. Barry of the American Can Company of Baltimore to get some information as to how to reduce No. 9 cans to No. 3 size. Mr. Barry said, "Which size No. 9 can do you mean? There are nineteen different sizes of No. 9 cans." (Laughter.)

Besides those, we had the No. 303 and other odd cans. I think there are sixty-four different sizes of cans that we have recommended in which foods are to be packed. Whether the canners are attempting to fit the shape and size of the mouths of all the people in the world I do not know, or their capacity, but it does occur to us that there are probably some needless sizes in use.

I think the general program this week has been discussed in the various sections of the Association, the needless necessity of having so many sizes and to follow the good work that has been done in Washington in the Department of Commerce of simplifying the number of sizes of cans that we use, with a view to saving us some money in the canning business.

I have nothing specific to offer except just a general complaint as Recording Secretary of the Tri-State Packers Association. My job has been rather difficult because of having so many sizes that are so nearly alike. We have two sizes of No. 2 cans that you cannot tell apart by looking at them. They are of the same diameter but there is one-sixteenth inch difference in their height. I see, however, that both those sizes are recommended for continued use and for adoption. I suppose there is some real reason that we should have those two close sizes of No. 2 cans, but I am giving that as an illustration.

After the Department of Washington has given due consideration and after holding numerous conferences and doing a lot of measuring and weighing, they have at least recommended that we drop some sizes of cans, but they still recommend two sizes of No. 2 cans which you cannot tell apart without calibrating them.

I should like to ask any gentleman in the room who knows about the two sizes of No. 2 cans why the recommendation has gone through to continue those two cans with only one-sixteenth inch difference.

CHAIRMAN MAXSON: Can anyone in the room answer that question?

MR. PRESTON McKINNEY: I understand the committee of the National Canners Association has not agreed on that at all. They are working on the idea of eliminating one or the other of those No. 2 cans.

MR. SHOOK: I am glad to hear that.

I knew that the report I read on the Simplification of Containers was not a finished report to be presented here for consideration by the National Canners Association.

CHAIRMAN MAXSON: In view of the fact that the National Canners Association has this under discussion we will pass it.

The next will be the report of the Nominating Committee.

THE ELECTION

MR. SCUDDER: The Nominating Committee presents the names of Mr. H. G. Maxson for Chairman of the section next year and Mr. J. A. Killian of Marshfield, Missouri, as the Secretary. I move the acceptance of these gentlemen if it is agreeable to the body.

The motion was seconded.

CHAIRMAN MAXSON: Are there any other nominations? The motion was put to a vote and carried.

CHAIRMAN MAXSON: Is there any other business you gentlemen wish to bring up at this time? If not, we stand adjourned.

The meeting adjourned at twelve-fifteen o'clock.

Pumpkin Section

Tuesday Morning, January 21, 1930. 9:30 A. M.

C. D. Minton, Forest Grove, Oregon, presiding.

THE meeting of the Pumpkin Section convened at nine-thirty o'clock, Mr. C. D. Minton, Forest Grove, Oregon, presiding.

CHAIRMAN MONTON: The first order of business will be the appointing of the Nominating Committee, and I am going to ask Mr. F. B. Clark, of the Waupun Canning Company, to be Chairman, Mr. Schafer, of the Brighton Canning Company, and Mr. Gregg, of Stockley Brothers, to please act on this Committee. We shall ask them to report at the close of this meeting.

The next order of business is the report of the Chairman.

CHAIRMAN'S REPORT

THE pumpkin as we view it today has become one of the essentials of every-day life. Please emphasize that word "essential." The old idea that the pumpkin was only a Thanksgiving or Christmas adjunct has passed, and we now find it on the menus of hotels and restaurants twelve months in the year. It is no longer a seasonable product, but has a continuous demand throughout the year.

This has been brought about, not from any great amount of advertising in periodicals, but by the efficient manner in which the average canner is now preparing his product, not only for the baker alone, but for the housewife, the latter being by far the more important in the consumption of our product.

No more does the busy housewife spend her time peeling the pumpkin, placing it in the iron pot, cooking and stirring it for from three to four hours, then scorching it to give it the desired color, finally sifting it and preparing it for the pie.

How different is the present method. She steps to the fruit closet, takes down a can of pumpkin, empties it into the mixing bowl, and in a few moments has it ready for the oven. This is becoming the rule.

However, there are thousands who have not yet come to the use of the canned article. It is our business to educate this mass of housewives in the right way of thinking. There are also some bakers who still believe they can buy from the farmer and prepare their own pumpkin at a less cost than they can use the prepared article. That may be true for part of their use. However, as their trade becomes a yearly trade, they will find, with their added cost of labor and loss by spoilage, that the canned pumpkin is by far the cheaper.

Another source of added demand is the restaurants and cafeterias. How often you go into a restaurant and see on the bills of fare "chocolate cream," "pineapple cream," "banana cream," "lemon cream," consisting of a little fruit and a lot of filling, but no pumpkin pie.

For two weeks I have been in the heart of the pumpkin canning section. I noticed one of our manufacturers has gotten out a brochure on the uses to which his particular brand of pumpkin is adapted. That is a splendid idea. Let us imitate this and originate some other ways to bring pumpkin to the attention of the public. There is no other branch of the canning industry that presents more interesting possibilities and problms than that of pumpkin. It must be followed from the time the growing contract is made, and even before, until the pumpkin is in the can.

It has been elevated from the casual crop between the rows of corn to the dignity of a cultivated crop. The scene in some of our factories in canning time is inspiring, and at the same time really wonderful. When we see the loads of bright yellow pumpkins coming in from all directions, and think they are mostly for pies, the amazement is indeer amusing.

From an artistic standpoint, the color of the pumpkin can only be likened to the glowing sunset. From a poetic standpoint, listen to these lines by one of the local writers in my town:

How dear to the heart are the scenes all around us
As loaded with pumpkins the trucks fill our streets
The small truck, the large truck, the wheelbarrow, wagon,
All filled up with pumpkins for pies that you eat.

Our business is to continue to put more thought, more energy and more salesmanship into the fast growing commodity that is increasing the annual output of the canned fruit industry each year. In ten years the output of the northwest has increased more than twenty times, and I believe it is safe to say that a corresponding increase has been made in other parts of the country. (Applause.)

Our next address is on the "Consistency of Canned Pumpkin," by Mr. H. R. Smith, Research Laboratory, National Canners Association, Washington, D. C.

Consistency of Canned Pumpkin

By H. R. Smith
Research Laboratory, National Canners Association

THERE is a great variance in the consistency of the canned pumpkin prepared commercially in the United States. The amount of starch found in canned pumpkin also shows great variation—from less than one-half of 1 per cent to more than 6 per cent. The canned product containing about 6 per cent of starch has a heavy cheese-like consistency. It often shows occasional patches or pockets of white material resembling cooked starch in appearance. These pockets vary in size, sometimes approaching the size of a walnut but usually they are much smaller. These characteristics—the heavy consistency, the high percentage of starch and the occurrence of pockets of starch-like material—have been regarded by some as evidence that starch was added in the manufacture of this type of canned product.

Before the beginning of the pumpkin canning season this year, a study was made of this very stiff canned pumpkin packed in Oregon. It was found that the product did not contain any added starch. The white pockets were found to consist of dextrin and soluble starch, which dissolve during the processing of the pumpkin and flow into such holes in the mass of pumpkin as are formed when this very stiff material is forced into the cans. Many of the holes were only partly filled with the white starch-like material.

Microscopic examination showed clearly the presence of the very small grains of pumpkin starch within the pumpkin cells. In the case of the stiff Oregon pumpkin, these starch grains appeared to entirely fill the pumpkin cells. In canned pumpkin of soft consistency, grains of pumpkin starch were also present in the pumpkin cells, but in very small numbers—in fact, a considerable percentage of the pumpkin cells contained no starch grains at all.

Some experimental packs were prepared in the laboratory in which known amounts of corn starch were added to canned pumpkin. In all cases the microscope showed the pumpkin starch grains within the pumpkin cells, but it also revealed the presence of distorted granules of the added starch outside of the pumpkin cells. Any material amount of added starch in canned pumpkin is easily detected by the microscope.

During the last year requests have come to the Research Laboratory from several pumpkin canners for suggestions that may assist them in increasing the body of their canned pumpkin. A study was made of the pumpkin canning industry in southern Indiana and Illinois. The pumpkin grown in this section is of the Connecticut field type. In Indiana practically all of the pumpkins are grown with corn. The general principles of the canning methods used by the different factories in this section are quite uniform, and the consistency of the canned product is also fairly uniform. This consistency is not at all thin, but it is noticeably less thick than the very heavy-bodied canned pumpkin from the Northwest.

In this Southern Indiana and Illinois pumpkin canning section, the pumpkins are washed, cut into pieces, wilted with live steam, drained, pressed, put through one, two or three cyclones or finishers, filled into cans, capped, processed, and water cooled.

The washing is done by hand in tanks of warm water, or in squirrel cage washers, or a combination of the two. A few factories remove the stems also. The cutting is done by revolving knives of one type or another. The pieces obtained are from one to three inches square. More or less effort is made to separate the seeds but it is not considered necessary to remove them.

The wilting is done in iron tanks (hominy tanks) on trucks, in one of several types of towers, or in a continuous horizontal wilter. The iron tanks have perforated false bottoms into which the live steam is conducted. These tanks hold from one-half to 1 ton of cut pumpkin and about 35 minutes is required for wilting. The resulting liquid is allowed to drain off. The towers are from 20 to 30 feet high and about 3 feet in diameter and hold about 3 tons of cut pumpkin. The steam is let in at the bottom until the entire mass is wilted. The weight of the pumpkin exerts considerable pressure to squeeze out juice. There is also a continuous tower wilter where the cut pumpkin is fed in at the top and the completely wilted pumpkin is forced out at the bottom by a screw conveyor. It takes about 30 minutes for the pumpkin to come down through the tower. The continuous horizontal wilter contains a slowly-moving, wide, perforated belt within a shallow covered box. The cut pumpkin is spread on this belt in a thin layer and is subjected to the action of live steam for about 30 minutes in passing through this box. The liquid from wilting drains away and the completely wilted pumpkin falls from the end of the moving belt on to a continuous pressing belt.

The wilted pumpkin is pressed by one of several types of machines. In some, a traveling belt carries the pumpkin under iron rollers which are so weighted as to bring about the desired pressing. Another very rugged press consists of a steel tube about 12 feet long and 12 inches in diameter, one end of which rests on the floor and the tube inclines upward at an angle of about 30 degrees so that the upper end feeds directly into the hopper of a coarse cyclone. Inside the tube is a large screw conveyor which slowly forces the pumpkin upward and out through the gate at the top. In a space cut out of the lower side of the upper half of this tube are set end to end lengthwise, two strong cyclone screens. The liquid squeezed from the wilted pumpkin drains out through these screens. In the case of the tower wilters, by shutting off the steam and allowing to stand for a time, the weight of the pumpkin squeezes out enough of the liquid. With the continuous tower wilter the same screw conveyor which forces the wilted pumpkin out of the bottom of the tower pushes it through a special tapered metal screen. The screw conveyor and the screen are larger at the tower-end than at the exit-end and this exerts the desired pressure on the pumpkin. The liquid goes through the holes in the screen and the pressed pumpkin goes clear through the length of the screen.

After pressing, the product is put through one, two or three cyclones or finishing machines. The number and mesh of these screens influences the fineness or "grain" of the finished product besides removing the seeds, skins, fiber, etc.

Just before filling into the cans, the finished product is put through a pre-heater to bring the "filling" or closing" temperature up to or over 170 degrees F. This point is quite rightly considered very important and one canner takes extreme care to have this temperature over 200 degrees F. The pre-heaters are long tubes surrounded by steam under pressure. The temperature of the pumpkin coming out of the pre-heater is controlled by adjustment of the steam pressure around the pipe.

In most factories all of the juice from the pumpkin is thrown away. One firm discards the juice liberated during the wilting but saves and concentrates it in an open pulp tank all of the juice removed during the pressing of the wilted pumpkin. This concentrated juice, which has the consistency of a light molasses and a sweet taste and strong pumpkin flavor, is put back into the pumpkin in the box beneath the first cyclone.

A series of experiments showed that the liquid which separates during the wilting with live steam takes out about 25 per cent of the total solids of the pumpkin. The liquid which is afterwards pressed out, removes about 15 per cent more of the total solids. This loss of soluble solids produces a corresponding increase in the proportion of insoluble solids, which give the body to the finished canned pumpkin. By pressing out more of the soluble material, a stiffer product may be obtained, but the yield of canned pumpkin per ton would be correspondingly low.

Some canners formerly wilted their pumpkin in the process kettles, using steam under pressure. A series of experiments showed that very little time was saved by this procedure which is not at all suited to large factory production. The loss in solids due to wilting by this method is practically the same as that found in the experiments using live steam.

Several additional factors were investigated which might have some effect on the thickness or consistency of the final product. One factory was sorting the raw pumpkins into two grades on the basis of physical appearance of the individual fruit as received at the factory. Approximately one-fourth of the pumpkins were sorted out as being more nearly perfect in degree of maturity and quality. These were canned separately as a fancy grade of pumpkin. As compared with the canned product from the remaining three-fourths, which went to make up this factory's standard grade, the fancy pumpkins showed a slightly stiffer consistency. The consistency of this fancy pumpkin, however, is still comparable with that produced by other factories in this Midwest pumpkin section.

There was a noticeable difference in the degree of fineness or "grain" of the prepared pumpkin canned by the different factories in this section. This varied all the way from very fine to extremely coarse. One factory was using only one cyclone. This resulted in a very coarse "grainy" pumpkin, quite noticeable to the taste and contrasting strongly with most of the other packers' output. This particular quality of degree of fineness was further investigated by putting some prepared pumpkin through a very small aperture under extremely high pressure. This produced a pumpkin entirely devoid of any grain at all. The physical sensation of tasting such a product is definitely unpleasant. It resembles warm butter more than anything else. It seems that the insistence of the experienced canners on a perceptible grain in their finished product is well justified.

When the wilted pumpkin is forced through a cyclone, the more liquid portion comes through first and is noticeably brighter in color and thinner in consistency than that portion which is forced through near the exit end of the cyclone. A series of samples was collected to show more clearly this difference in the consistency and appearance. One sample was taken from very near the entrance to the cyclone and a corresponding one from very near the exit of the same cyclone. A similar pair of samples was taken from the second cyclone and another from the third cyclone or finisher. These samples were canned and processed as usual. Examination of these samples showed a very marked difference in all characteristics. With each pair of samples the product near the entrance of the cyclone had good color and flavor and was noticeably thin in consistency. The corresponding sample from near the end of the cyclone was very coarse and fibrous as well as stiff and lacking in flavor. Table No. 3 shows the difference in composition of these separate portions. The product from near the end of the second cyclone was noticeably dry and stiff. When removed from the can the product stood like a mold with each detail of the can outlined on the surface. These samples show that the canned pumpkin as prepared in this section is a mixture of the highly colored flavored portion and the thick fibrous portion of the pumpkin.

Although laboratory experiments had indicated that the addition of starch to prepared pumpkin did not give the desired consistency, it was considered advisable to make further tests in the canning factories. Accordingly, 4 per cent of each of six commercial starches was mixed with a separate portion from a single batch of prepared pumpkin and each mixture was canned and processed as usual. Examination of samples from these experiments showed the following characteristics.

TABLE I—CHARACTERISTICS OF PUMPKIN CANNED WITH ADDED STARCH

Thickener	Flavor	Consistency	Appearance
1. Potato starch	poor	poor	glossy
2. Rice starch	poor	pasty	glossy
3. Cracker meal	bad	pasty	coarse
4. Corn flour	O. K.	satisfactory	fair
5. Tapioca flour	poor	pasty	very glossy
6. Corn starch	good	pasty	fair

No. 4, having the corn flour, showed the most promise. Additional samples were prepared with 2, 3, 4 and 5 per cent of the corn flour and also other samples using similar proportions of "special process" flour, which had been used for thickening soups. Examination of the samples showed no material difference between the canned pumpkin containing added corn flour and that containing the added special process flour. Two per cent was too little to have a material effect on the consistency and 5 per cent was more than was desirable. Three or 4 per cent of either the corn flour or the special process flour produced a stiff pumpkin which would stand up fairly well when taken out of the can. The presence of such an added stiffening agent was quite noticeable from the jelly-like consistency, the sticky feeling, and a slight change in the taste of the pumpkin. The addition of sugar to similar experimental lots did not improve the flavor and did perceptibly reduce the consistency. Since corn flour gave better results than fine corn starch additional samples using household corn meal were prepared to show the effect of still coarser particles. These, however, were not at all satisfactory, since the individual grains of corn meal could be seen and tasted in the pumpkin. None of the canned pumpkin seen in this section, and likewise none of the samples prepared really resembled the dry, granular, solid canned pumpkin prepared in the North-

west. One sample prepared from the stiff mass being forced through the screen near the end of the second cyclone did have the stiff consistency, but the color, grain and flavor were not at all desirable.

Through the courtesy of the American Can Company there was sent from Oregon to the factory in Indiana 1000 pounds of squash being used in Oregon for canning. (It will be remembered that either pumpkin or squash or mixtures of the two may be used in the preparation of canned pumpkin.) These yellow squash varied in weight from 4 to 34 pounds, averaging about 12 pounds each. The fruit was sound and ripe and arrived in excellent condition. The color of the skin was orange-yellow, and all of the specimens were of the same variety. This entire lot of squash was used in the preparation of one experimental lot of canned pumpkin. The regular factory procedure of this factory, where the previous experiments had been conducted, was followed except that the stems were knocked off by hand and the seeds and fiber from the inside of the squash were also removed by hand. It was found that 22.8 per cent of the solids present in the original squash was removed during the wilting and pressing. The original squash, as received at the factory, contained 9.1 per cent total solids as compared with less than 6 per cent total solids in the Indiana pumpkin. Using the same method of calculation, it was determined that the yield of canned pumpkin on the basis of the weight of raw material used was 26 per cent with Indiana pumpkins and 60 per cent with the Oregon squash. These figures do not represent regular factory yields, but they were obtained from similar experiments conducted in the same factory.

There is given below, in tabular form, the per cent of total solids and starch of the Indiana pumpkin and also of the Oregon squash canned in Indiana. There is also given for comparison, the analyses sent to us by Dr. Donart of the canned product obtained by him in experimental packs of two varieties of squash being used for canning in Oregon. It will be noted that the composition of Dr. Bohart's Boston Marrow canned squash is very similar to that of the Oregon squash canned in Indiana. Direct comparison of the two products showed that the consistency was also substantially the same. Starch was determined by hydrolysis with hydrochloric acid of the material insoluble in 50 per cent alcohol.

TABLE II—SOLIDS AND STARCH IN CANNED PUMPKIN

	Total Solids Per Cent	Starch Per Cent
Indiana Pumpkin	10.35	1.62
Oregon Squash (Canned in Indiana)	11.01	1.28
Oregon Squash (Boston Marrow)	11.76	1.42
Oregon Squash (Golden Delicious)	16.79	6.29

The difference in composition of the canned pumpkin prepared from Boston Marrow squash and that from Golden Delicious squash is striking, and the difference in consistency of the two products is even more apparent. The Boston Marrow canned squash was similar in consistency to that of the usual type of canned pumpkin prepared in the Indiana section, and also to the experimental lot of canned Oregon squash prepared in Indiana. The Golden Delicious canned product was exceedingly stiff and the white "pockets" were very noticeable. In this connection it is interesting to note that Dr. Bohart reports that the pumpkin canners in Oregon use continuous wilters and do not press the product at all. When ready for canning the prepared pumpkin is so stiff that ordinary filling machines are not used.

Although it is possible to produce canned pumpkin with a stiff consistency using the type of pumpkins now grown in Indiana, the yield of the canned product will be exceedingly low, and the quality not desirable. The yield of canned product of any specified degree of stiffness is dependent, at least in large part, on the percentage of starch in the raw product. Canners will no doubt be interested in the tests and variety studies which are now being planned by experiment stations in the Middle West. It is the intention to compare varieties used for canning in different parts of the country. It is hoped that pure seed strains may be produced and that data may be obtained on relative tonnage, season of maturity, yield in cans per ton of raw product and starch content. The starch content has particular significance in relation to consistency or body of the finished product.

The following table gives analytical data of typical samples which were taken in connection with the experiments previously outlined. Much analytical work remains to be done on the samples of experimental packs put up in connection with the work reported above. When that work is completed a further statement regarding the matter will be prepared.

TABLE III—SOLIDS CONCENTRATION OF PUMPKIN MATERIAL COMING THROUGH THE CYCLONE SCREENS

Place	Total Solids Per Cent
Near entrance to first cyclone	8.04
Near exit to first cyclone	13.69
Near entrance to second cyclone	9.07
Near exit to second cyclone	17.19
Near entrance to third cyclone	9.28
Near exit to third cyclone	13.23
Finished Product	9.38

TABLE IV—COMPOSITION OF TYPICAL SAMPLES OBTAINED IN THE EXPERIMENTS DESCRIBED ABOVE

Description of Sample	Total Solids Per Cent	Water Insoluble Solids Per Cent	Reducing Sugars Per Cent	Sucrose Per Cent	Starch Per Cent
Indiana Pumpkin:					
As received at factory	5.68	0.95	3.25		0.25
As received at factory	5.17	0.93	2.04		0.26
Finished canned product	10.35	3.68	2.80	0.10	1.62
Finished canned product	9.38	3.56	2.85		0.74
Pulp from seed cavity	2.79	0.36	1.23	0.15	Trace
Juice from wilting	3.14				
Juice pressed wilted pumpkin	4.27				
Concentrated juice from pressed wilted pumpkin	20.67	1.01	11.10	2.18	0.81
Oregon Squash:					
As received at factory	9.10	2.46	3.92	0.43	0.51
Juice from wilting	5.25				
Juice pressed wilted squash	8.71				
Finished canned product	11.01	3.98	3.63	0.70	1.28

CHAIRMAN MINTON: Miss Ruth Atwater will now address us on "What the Housewife Desires in Canned Pumpkin."

What the Housewife Desires in Canned Pumpkin

By Miss Ruth Atwater, *Director of Home Economics National Canners Association*

FOR a good many years before I expected to be connected with the canning industry, I was a consumer of canned foods. Among the varieties that I felt were particularly helpful I counted canned pumpkin as a real boon.

I am reminded of a friend, who, when I complimented her upon her excellent pumpkin pie, said, "It ought to be good; look what I did to my hand when I peeled the pumpkins." "When you peeled the pumpkins," I replied. "How did you peel them?" "With a knife, of course," she replied rather tartly.

"Not raw?" I inquired.

"How else?" she said.

When I mildly suggested that it was much easier and far more satisfactory to use canned pumpkin, or if one felt that they must use pumpkin cooked in the home kitchen, that it was far easier and more efficient to split it and steam it before trying to separate rind and pulp, she assured me that her mother had always prepared pumpkin for pies herself by peeling them raw, and that as a dutiful daughter, what mattered a large blister or two, provided she followed the family tradition? As for canned pumpkin—well, everyone knew that it was poisonous.

This is, I trust, an extreme case, for I find most women very grateful to the canner for giving them a product that is dependable and not only easy to prepare, but inexpensive, convenient, and, I think on practically every market.

I have been thinking about this topic, "What the Housewife Desires in Canned Pumpkin," for some time, and I have asked a great many women what their standard is for good canned pumpkin.

In almost every case I have had a reply somewhat like this, "I want pumpkin of a good yellow color, not dark and not too light. I want it stiff enough not to run when it is turned out of the can but not so stiff that it is hard to blend with other ingredients; it should have a characteristic flavor and not be either too smooth or too granular."

This is indefinite, perhaps, but women know what they are talking about, and they want good quality pumpkin which will be easy to use. Later this morning a gentleman from the pie-baking industry will tell you just what the pie-bakers want as a standard for canned pumpkin, and I shall be interested to know what their standards are.

The first thought that enters everyone's mind in connection with canned pumpkin is, doubtless, pumpkin pie with a delicious, spicy filling a flaky, crisp, tender crust. Just the kind that grandmother used to make. Is there anything better?

Some of you may say, "Yes, pumpkin pie itself is better with a meringue, or better still with whipped cream on top." Perhaps; at any rate, this makes a change. Individual pumpkin pies have become very popular for parties during the past few years; these are often topped with whipped cream.

A frozen pumpkin pie has been brought to my attention. This recipe came from Purdue University through the courtesy of Mr. C. E. Roberts, Superintendent of the University creamery. This recipe makes approximately five gallons of pumpkin ice cream. He tells us to use one No. 10 can quality pumpkin; season with spices as for pumpkin pie. Add this to 3 gallons of ice cream base. When the ice cream base is partly frozen, stir in the prepared pumpkin; add yellow ice cream color until the desired color is obtained. No flavor is required. Proceed as for commercial ice cream.

For home use this can be cut down to make one gallon or half a gallon or less. It can be frozen in the freezing unit of a mechanical refrigerator. In making frozen dishes it should always be kept in mind that the sugar and spice should be quite pronounced before freezing, for freezing tends to lessen the intensity of flavor.

In spite of the fact that we always connect pumpkin with the Thanksgiving feast in the form of tempting pie, I have noticed in looking through the many recipe booklets which are published by pumpkin canners that there are interesting and varied suggestions for other uses of this product. These include pumpkin dumplings, pumpkin soup, pumpkin custards, steamed or baked, pumpkin and apple dumplings, pumkin souffle, and pumpkin sherbet. They also include pumpkin griddle cakes, biscuit, Indian pudding, preserves and marmalade.

In addition to the recipes which I find you are using to interest people in uses of pumpkin, have you thought of pumpkin croquettes, which may be made like sweet potato croquettes? These should have a heavy-bodied pumpkin as the foundation.

Pumpkin souffle with cheese makes a nutritive luncheon or supper dish. The cheese may be melted and used in the white sauce that the pumpkin is blended with; the whole is then beaten into the egg yolks that have themselves been whipped to a creamy consistency; this should be folded lightly into the stiffly beaten egg whites; put into a baking dish, and baked in a moderately hot oven until well browned.

Again, have you ever tried making pumpkin pie with a crust made of finely ground cracker crumbs prepared by grinding plain soda crackers to a fine dust? Grease the bottom and sides of a pie tin thoroughly. Sprinkle the cracker crumbs evenly over the sides and bottom to a depth of from one-eighth to one-fourth inch. Make the pumpkin filling as usual and carefully fill the tin, being sure that the filling does not push aside the crumbs leaving a bare spot. Bake in the usual manner. When done, this will form a crust which may be sliced and which has an interesting texture. The same thing may be done by sprinkling cornmeal over the sides and bottom of a pie tin before the pumpkin filling is put in. Yellow cornmeal is best for this purpose.

I have been surprised in looking through a number of modern cook books to find that they almost never give directions for using canned pumpkin in their pumpkin pie recipes. As a result, many women do not know that canned pumpkin is available. Would it not be wise to get some good recipe material into the hands of a great many women's organizations as promptly as possible in order to let them know that the product is available? Then let us give them a quality product so that they will be pleased with their purchase.

Why not have one good recipe for the use of the entire contents of the can on every label on all can sizes of pumpkin? Women use the recipes that appear on labels when very often they will not trouble to look up a recipe in a cook book. Have the recipe well tested and reliable so that the experience of the woman with the contents of the can will correspond to her expectation when she reads the label. Every time that the experience of a woman with the contents of a can of food does not check with her expectations after she has read the label, she is disappointed and is not likely to come back for more of that particular product. Each label is in itself an advertisement, and the more helpful information a woman finds on it the greater her confidence will be in the product.

We all learned in our youth that

"Peter, Peter, Pumpkin Eater
Had a wife and couldn't keep 'er
Put her in a pumpkin shell
And there he kept her very well."

Times change, and no modern Peter could keep his wife in a pumpkin shell; well or otherwise. Women have escaped not only from out of the shell, but they wish to get entirely away from it and from the drudgery that it often implied. We have a product that satisfies them; let us tell them about it in all sincerity; help them to use it to better advantage, and give them the quality they demand. When we have succeeded in making women acquainted with the possibilities of canned pumpkin, they will use it; so let us introduce them promptly, for, as the young girl said sadly to her mother, "Yes, but you know, dear, that I cannot marry a man I have never met," and no woman will use a product that she has either not met or does not know that she can meet if she wishes.

In helping the homemaker to know and use this product we will be helping sales, for in the last analysis it is the woman in the home who controls most of the purchasing power of the American family, and her decision regarding the food that is

MISS RUTH ATWATER

bought is usually final. Give her something that she will be proud to serve to her family and friends, and she will respond promptly, especially to a product like canned pumpkin which saves her so much hard labor and which furnishes a much more uniform product than she could have by preparing the pumpkin herself; and let us not forget that it is quality that she insists upon having.

CHAIRMAN MINTON: I did not know you had been on the coast, Miss Atwater. You evidently found the same lady out there I am well acquainted with, whose mother made the same kind of pie, and whose grandmother made the same kind of pie. I gave her a can of pie pumpkin, and she does not cook her own any more.

"Some Other Factors I have Found in Pumpkin Growing," is our next address, by Mr. A. T. Erwin.

Some Other Factors I Have Found in Pumpkin Growing

MR. ERWIN (Slide): I made some photographs of the cross sections of two varieties, and had a young lady color them, and she attempted to reproduce the exact color tints.

(Slide). Here are the two color types of the sweet cheese pumpkin. These were selected as the two extremes. Of course, between those two you can get specimens of both that are a good deal less pronounced than that, and at the same time we found by cutting them open we could assemble quite a large pile just as pronounced as those.

The interesting thing is that these specimens are of equal maturity. I had always considered this lighter specimen as immature, but in equally mature specimens you can find those two shades of color. This lighter cream shade does not change over when mature into the other shade.

You may wonder if that is characteristic of each color. It is partly accidental, and partly due to the fact that the variety

we were interested in working with was the cream buff shade. This other thing about the thickness of flesh had not come to our notice up to that time; I think that characteristic could be developed just as well with the other. That is partly a happenstance. One has a decidedly thinner grain than the other. Growers have selected mostly those of buff colored flesh.

(Slide). This slide shows a typical cross section of cucurbita, or the pumpkin and squash family. Beginning at the top, you have the epidermis, or skin as it is commonly called. Those small cells under it contain, when the fruit is young and immature, a layer of green coloring matter. Then you have a layer of the stone cells, which make the rind hard, as in the Hubbard squash. In some varieties of pumpkins these cells are absent, and you do not have a hard rind. In other varieties you have a very hard rind due to the formation of the stone cells.

From this point on you have a large, thick fleshy layer. That is the meat of the pumpkin, the part you are interested in processing. Mr. Smith referred to the matter of those starch grains. It is needless to call attention to the fact that you have starch grains in a pumpkin as well as in some other plant.

(Slide). This is the mammoth squash, one of the very large varieties. You will notice that cross section there, this greenish layer of chlorophyl cells. I think if the canners would train the farmers to study the matter of maturity more and watch for the disappearance of that layer of green cells, would teach the farmers to lift the skin carefully and see whether there is still a layer of green cells there or not, and if there is, that is evidence of a green pumpkin not ready to pull, it would be of great advantage.

There comes a time in the ripening process when that layer of green cells is absorbed and disappears, so there you have one of the characteristics that is a fairly definite index of maturity. If those chlorophyl cells are still present, you have quite definite evidence that it is an immature specimen.

(Slide). In some parts of the corn belt I think we have carried the matter of tonnage and heavy yield so far that there has been some sacrifice in the matter of maturity, and the grower or farmer has more or less dominated the situation. In fact, I know at one of our factories where they changed over from a large variety to one of the small fruity sorts some of the farmers raised hob about that, and they wanted to know if they were going to send out orange crates to pack them in. The farmer, in this tonnage point of view, has dominated the situation at the expense of growing varieties which mature better and will show a higher percentage of sugar and starch.

This variety, the Calhoun, is one of the kinds I think is worth, not necessarily recommending, but at least, giving a trial, where the matter of maturity is a factor. It belongs to the group in which is the Kentucky Field, but it is a little smaller and a little earlier maturing, and from that standpoint it might find a place in a section where the Kentucky Field was too late in maturing.

The yield will not be as heavy as the Kentucky Field. My guess is it should be fifteen or twenty per cent less in yield, although by heavier planting you can compensate for quite a little of that, but it never will yield the amount the Kentucky Field will. You have to sacrifice something to yield if you are going to get good maturity, and in the end it is something of a compromise between the thing that yields business and which gives you what you want faom a standpoint of consistency.

I believe it is about ten days earlier in maturity.

The exterior is very much the same shade as the sweet cheese; so far as this variation in flesh color is concerned, I do not know whether you would find that same thing in this variety or not, but it is one of the varieties we are going to study closely this coming year from that standpoint.

(Slide). Here is a point of interest about the Kentucky Field. A number of times I have noticed where you have a large field of the Kentucky Field these crookneck types appear now and then, and sometimes you get very pronounced specimens of them, no matter how careful you have been with your isolation of the seed stock. This type seems to persist in coming up in more or less degree. I used to wonder if, somewhere back along the line, there was not some crossing to account for that. In the last few years, though, I have been led to feel it is a reverting to the original form, from which the other has possibly been developed.

In studying the history of the pumpkin, the nativity of the pumpkin, you get back to the time when it really was quite an ancient American product. It runs away back to 1,000 or 1,500 years B. C., so that type is a very ancient form of cucurbita. I thank you. (Applause.)

CHAIRMAN MINTON: Mr. Henderson, we will hear your side of the story.

Canning Better Pumpkins for Pie Bakers' Use

By James Henderson
of Case-Moody Pie Company, Chicago, Ill.

I AM just a pie baker. We bake a good many thousands of pumpkin pies per day. I am responsible for the looks of the pumpkin pies, and a good many times I do not like the looks.

I felt like a hero this morning for coming down here. I felt I was going into the camp of the enemy. That is the way I have looked on you men for a good many years, and I have not changed my opinion any, but I am enjoying myself.

I have often wondered whether the pumpkin canners want the pie bakers' business. I am not nearly so old as I look. I have quite a few gray hairs, and the reason for them is canned pumpkin. We never had anything to worry us so much in the pie bakery line as canned pumpkin, and we do not like it. There are a good many reasons for that, and I will try to tell you a few of them. Some of my remarks may seem foolish, but some of them may get over and do some good. In our business we have a lot of lady visitors, and I get a lot of information through listening to their more or less silly remarks.

Canned pumpkin! We always finish up the season with it. The season is a great deal longer than it used to be. We start a lot earlier and end up a lot later. We always start with fresh pumpkin. You will pardon me for being very frank. I am doing this in a spirit of constructive criticism. We start out with fresh pumpkin pies because we know we are going to make a hit with them.

There are a lot of things that enter into that. In the cooking of the fresh pumpkin we steam it. We have developed a home-made system of steaming the pumpkin and draining it at the same time. That gets a uniform consistency, and that is what we can not get in canned pumpkin. I do not know whether it is on the market or not, but I have not seen it. I am not the purchasing agent, but I have never seen a uniform run of canned pumpkin in all my years of experience in the pie baking business.

The fresh pumpkin we get to a uniform consistency and we can run a formula on fresh pumpkin, day after day. My employer is the biggest crank on sticking to a formula I ever met, and I have had more arguments with him over canned pumpkin, so do not wonder that I maybe hate you fellows a little bit. He wants us to stick to a formula so that every man in the bakery can stick to that formula and we do not have to depend on a man's judgment to do a thing. In that way we use so many gallons of milk, so much starch, and so on, and day after day the best pumpkin comes through.

When we run out of fresh pumpkin, the word goes out, "Tomorrow we start canned pumpkin." Everybody heaves a sigh, grinds his teeth and figures the worst. "How does it look today?" The fellow is dumping the canned pumpkin. It looks sloppy. All right; we figure that out. We have a chemist, but we are in a hurry. We do not give him time to get the consistency, and so forth, so we figure it to the best of our ability and measure out the milk, and so on. We watch it. We put it through the agitator. We have a piping system from the floor above the bakery to the ovens. We fill up a large machine for mixing, and it is fed by gravity through the pipes to the different ovens all along the line.

Then we stand and watch and hope. We see them coming. How do they look? Maybe they will be all right. Then we go after the next batch. How is it coming? The answer is, "We will tell you after it comes." It comes through, and the pies are all cracked and bubbling up, and everything you could imagine.

You know, canned pumpkin reminds me of my wife. I have been married twelve years and I never know what she is going to do next. I have worked with that stuff, I have dreamed about it. I have had nightmares over it and have gotten gray over it. I turned gray almost in one winter, and our big trouble that winter was canned pumpkin.

We have gotten this far: We see how it looks when we dump it, and we know about how much milk to put in. Your oven has to be just so, and if you monkey with that oven, or try to change the heat during the filling, you are out of luck. The best way we get canned pumpkin to be nearly right is not to have too hot an oven, and hold the heat down on the top of the pie. Do not pull the heat off until you form a little skin over

the top, and then that holds it. Then, if you have too much heat you can open your damper and take off a little of the heat, but if you open that damper before that film is formed, you are going to have cracked pumpkin pie.

Maybe you think I am crazy, but I know I am not. (Laughter.)

We have several types of ovens, but if we pull the heat off any of them during the filling of those pies, we are done. We have 125 salesmen, 125 routes in this city, and if you would hear those fellows come in after a day like that, you would not wonder that I do not think you fellows are what you ought to be.

The restaurant trade is so educated to pumpkin pie that they know more about it than we do. The pie business at best is a lot of grief, and on top of all that grief the pumpkin pie makes it unbearable. The salesmen bring the pies back cracked. If you run the solution too thick they will have great big cracks across the center. If you run it too thin it starts bubbling all over the pie, little bubbles of steam coming up through the top, and after it has baked a while it is all full of little holes, like a chicken ran over it. We can sell only a pumpkin pie this is nice and level and smooth and solid.

I do not know why these things exist. Maybe you men do. These are just my problems, and I am responsible for them. I am glad I have the opportunity of telling you about them. I have waited twelve years to have this opportunity.

We steam the fresh pumpkin, drain it off and run it through a grinder, skin and everything. We just clean out the inside. We grind this pumpkin skin and all. When that is baked and you cut a piece of that pie, you have a light, fluffy piece of pie. It is rough looking, and it looks swell. The little light particles of skin stand out, just a little bigger than a pin head, a little brighter yellow than the body of the pie itself, a lovely color, and the people say, "Give me a piece of that pie."

Canned pumpkin! I heard someone talk about the smoothness of it. For the pie bakery, we do not want smoothness. We want that rough, fresh pumpkin effect. That is the only picture I can give you. Get a piece of fresh pumpkin pie and set it up and look at it. That is what our trade wants. When we change from fresh pumpkin, from this pretty picture with all the little rough yellow particles in it, to canned, it is a solid, dull mass. You cut it, and there it is—a dead, solid piece of pie. There is nothing attractive about it. It tastes fine. You can not tell the difference by the taste, but you can surely tell by the looks.

At our sales meetings the men all say that the people eat with their eyes now days. I think there is a lot of truth to that. Our salesmen are plugging for business, and they all say, "Get the looks." They tell us, "Never mind the quality, but get the looks." We stick to quality too, but they tell us to get the looks.

I just have something in mind regarding another fruit. We used to use fresh frozen all the year round, but these canners, or cold pack men, got busy and made a cold packed fruit that was so much superior in looks that they forced us to get away from the fresh fruit. The public demanded it. The fruit in the cold pack was sort of touched up a little bit, and when the pie was cut it rolled out as nice, big berries; wonderful. They do not know they are getting cold packed fruit, but that is what they want. A man will go up to a lunch counter and look the pies over and say, "I want that piece of pie."

It seems you men are intelligent enough. I sort of pictured a bunch of farmers. You are not like that at all. Why do you not develop something? It seems to me if I were canning pumpkin I would. Look at the business we have alone—thousands of pies a day all the year 'round, and we only use canned pumpkin when we can not get the fresh.

Last year we had too many fresh pumpkins on hand, and I decided we would cook the stuff up and put it in tubs and put it in a freezer. We did. We put up hundreds of tubs of it, and the stuff came out like fresh pumpkin. We thought maybe we could try that every year, and get away from canned pumpkin, but we do not have the space. We could not do it this year because of lack of space. You fellows are forcing us to that.

Surely something can be done about that. If you bring us something we can use which saves all this horrible labor we have with fresh pumpkin, it would be profitable. You know what fresh pumpkin means—a lot of fresh pumpkins packed away, men chopping it every day and cleaning it out. All that could be eliminated if you would make something we could use.

We always have the color problem. That we fix to suit. The trade wants a light, yellow pumpkin pie, a nice, light, yellow pumpkin. They come in at night and say, "Pumpkins were too dark today." We can fix that. We need a nice, smooth skin on top, and a pumpkin that will not pull away from the edges if it is a few hours old, or will not crack in the center. Those are the things we are up against.

With fresh pumpkin pie, we can stick to a formula all the way through until we are through with it. With canned pumpkin we change the formula three or four times a night, and that is what makes me look so old. I thank you. (Prolonged applause.)

CHAIRMAN MINTON: I wonder if there are any questions.

MR. H. R. SMITH: I think we got more ideas from Mr. Henderson, men, than from anything else that has been said here today. Take that stuff home and think about it. Does that not mean, in your terms, do not sift it quite so fine. He wants a little of that yellow rind in there. Do I understand, Mr. Henderson, that you steam your pumpkin and put it through a sieve, and everything goes through?

MR. HENDERSON: The seeds are taken out, but the skin is left on. Of course, there might be a few hard chunks that are taken out, but everything that will go through we use.

I am telling you, men. I see these salesmen every evening. That is one of my jobs, to see the salesmen, get their complaints, and I have tried to tell you just what those complaints are. It is up to me to get what the trade wants, and that is the kind of pie they want. The fresh pumpkin does bake up nice and light. I have heard chemists explain that the reason canned pumpkin is solid is that the cells are broken in canning. I know nothing about chemistry, but I believe I would do something, build new cells, or something.

QUESTION: What size screen do you put that through?

MR. HENDERSON: About the size a ten-penny nail would go through, up to the head. Then we have an arm driven by a motor revolving and forcing it through the screen.

MR. GROSVENOR (Tomato Products Company): We find if we cyclone too heavy we get a bitter taste. We are not the factory Mr. Smith spoke of, but he saw our process. We do not throw away a bit of the drainings of the steam process, and we do not press our pumpkin. We steam it in closed wooden tanks, and put it through the cyclone. It makes a sort of a mush. We evaporate that to any consistency we want. The cook himself makes a consistency test and from that determines when the batch is done.

I may say that ninety per cent of our business is with pie bakeries, and we have one firm here in Chicago which has used our pumpkin for the past three or four years, and they say when the fresh pumpkin season is over they will not have anything but ours. They want to keep to their formula. They do not want to change it.

MR. SCHUMAKER (Department of Agriculture): As a rank outsider who has no knowledge at all of the process, but who has listened to the whole program today, it seems to me the difference between the pie bakers' process, where they are able to put up fresh pumpkin in tubs, and the pumpkin in the cans is that in the main the canners are throwing away forty per cent of the solids of the pumpkin. I wonder if that is not part of the story. It may be that in that fact alone is the story.

MR. STEWART (American Can Company): Being a chemist, I think that Mr. Henderson, if he would rely a little more on his chemist, could help to control his pies. A consistency run can be made in about a half minute, and then he could operate his formula according to that consistency. There are a number of machines on the market with which he can do that in about half a minute.

I think, as has been said in the discussion, here is a good chance for the canner and the pie baker to get together, and if it is not inquiring into any personal procedures, I should like to ask Mr. Henderson something about the method he uses for steaming his fresh pumpkin.

MR. HENDERSON: Open.

MR. STEWART: That is the usual method. However, as Mr. Smith spoke of in his talk, I was with him on his work this summer. We carried out one experiment of steaming under pressure. We did not carry it out as far as we should have. I believe steaming under pressure is going to lead to a little heavier body of pumpkin. Mr. Henderson did not say just what body he wanted in canned pumpkin. I think you fellows would be interested in that. Being in a laboratory which is serving the whole country, the whole United States, we have complaints from the New York section that they can not sell their pumpkin in competition with the pumpkin here in the Middle West, because it is too light in body. The Middle West can not sell in competition with the Northwestern section because they have a heavier body. Here is a good chance to find out what his opinion is on that, and maybe it will help you fellows out.

There is another question I had in mind. Mr. Henderson said after the pumpkin was steamed and drained it was ground. I am not yet clear on that. He said the measure of the screen was about what would let a ten-penny nail through up to the head. Does the skin go through that port, or is there an additional grinder which chops up the skin and is it added later?

MR. HENDERSON: Whatever skin goes through, that is all we use. Anything that refuses to go through we throw out.

Regarding the consistency of the canned pumpkin, everything else being equal, I would not care whether it were heavy or light. We can regulate the formula accordingly. We want the liquid just so. If we have a heavy run, we put in more milk.

We just installed a laboratory and a chemist a few months ago, and he is working hard on canned pumpkin to help us out, and I believe that is going to be a big help.

A couple of days ago we had five or six lots of canned pumpkin in the warehouse, and I had the warehouse man get a can out of each lot. I do not know whose pumpkin they were. There was no label on any can. Every can was of a different consistency and of a different color. One can looked like mud, that sort of dead color. Another can had a nice, light yellow color that looked as if we could use it just as it was. Another can was solid. Every can was different.

That is what I am up against. I have always blamed you fellows. Maybe it is the fault of our purchasing agent. If it is, I am going to do some talking to him. We might get a uniform consistency.

I think you know what I mean. I wish I had a piece of fresh pumpkin pie. It bakes out light, and I have never been able to get canned pumpkin to do that. It bakes down solid. Even when the consistency is right and uniform, if you do not watch your oven every minute, you are going to have cracked pumpkin, no matter how your mix is, right or wrong. I can bake out of the same mix, if it is right, an oven full of pumpkin pies so that there are only a few pies cracked, and in the next oven every one will be cracked and useless, just by juggling the heat. I have never seen a full oven of canned pumpkin come out that did not have some pies cracked and unfit for use, and I have been at it almost fourteen years.

We have just taken in some of the other bakeries into ours, and I just asked that very question of every shop superintendent that we took in: What do you think of canned pumpkin? They all answer just about what I have told you.

There seems to be a scarcity of fresh pumpkin this year. We buy from several farmers directly. We buy everywhere and anywhere. I am afraid we would never buy canned pumpkin if we could get enough fresh to carry us through the year.

I do not know what varieties of fresh we buy. When we cook some of them up they turn a milky shade, there is just a streak of a milky shade through it. Others cook up all nice and yellow. The coloring we adjust to suit. We have to add artificial coloring.

CHAIRMAN MINTON: I wish we had another session this afternoon. It is very evident that here is a very large field for the canners of pumpkin, but there is another factor, as I see it, that enters into it. We have to get the man who bakes the pies, we have to get the man who buys the pumpkin, and we have to get those of us who sell to the wholesale houses all together sometimes. I think that might be a good start for our next year's program. I know if you take a can of pumpkin into the average buyer's office at the wholesale houses, he cuts it up, puts it on his palm, spreads it out in his hand with a spoon, and says, "Look at that rind in there. We can not sell that kind of pumpkin."

That is one reason we have been using the fine screens. Perhaps for household use that is all right, but I think personally he is all wrong. We get so much of the flavor of the pumpkin out of the skin that I think it is a crime that we throw away so much of the skin.

Mr. Smith, you said the degree of maturity had but very little effect. I wonder if you really meant just that.

MR. SMITH: That was the experience I had, in choosing from a lot those which were the perfect specimens, entirely ripe, with no signs of greenness on the skin. Taking those not abnormal in appearance, shape or size out, and then the proportionately poorer ones, the canned product from those two groups was quite similar.

CHAIRMAN MINTON: I wonder if that has been the experience of the majority? As far as flavor is concerned, I think there is a decided difference. In my experience, where you have that green streak on the outer edge, you get just a nice bunch of slop. When you have a good, ripe pumpkin, you never have that difficulty.

Personally, I appreciated hearing everyone on this program. I thing it has been a splendid program, and there are a number of things for us to work out, especially with the bakers and the buyers.

We will now have the report of the Nominating Committee.

MR. STEWART: There is one question I should like to ask Dr. Erwin. In working with pumpkin this summer, I noticed if you take a very thin slice of pumpkin and put it under the microscope and treat it with iodine, if this pumpkin is green you have very little trouble in demonstrating the presence of starch. If the pumpkin is thoroughly ripe, at least in the Indiana pumpkin where I have been, you find very little starch present.

With squash, a fruit that is apparently ripe, there is a large amount of starch present. Are these two fruits of the same type, or are they like an apple, which has starch when it is green and changes to sugar when it is ripe, or is the squash the type of corn, which has sugar when it is green, and starch when it is ripe?

MR. ERWIN: I wish I could answer your question, but I must say that I can not. I think the matter of the relation of type to the starch content is one of the things we really do not know very much about, and it is a thing we ought to get into. The information is very fragmentary on the subject.

CHAIRMAN MINTON: I presume most of the canners are not chemists, but they have observed the effect of weather conditions in their work, and I should like to have some observations from some of the canners on that point. Mr. Holt, what is your thought in that matter?

MR. HOLT: I am no chemist. I do not know. We have a type of pumpkin that has a large amount of starch, and another that has no starch, and the starch content can be regulated by the two types being mixed. As to whether there is a particular time of the growing year in which there is more starch than at some other time, I have packed pumpkin for twenty years, and I do not know much about it yet. It acts funny. If we irrigate our pumpkin in the Northwest, we have dry pumpkin. If we have a dry year and the pumpkin has a hard time in maturing, it is wet. How do you explain that? I do not know.

CHAIRMAN MINTON: Are there any other observations along that line? I have noticed the same thing Mr. Holt speaks of, and I have also noticed that if your pumpkin is ripened by a frost, you will have more or less wet pumpkin. My thought in that matter, and I have asked our college the same question, was that the frost changed the starch content into sugar, and I have a letter from the college saying those were the conditions that prevailed with practically all fruits and vegetables. I also think you will find the very mature pumpkin has less starch than that which is just about mature.

Is the Nominating Committee ready to report?

THE ELECTION

MR. F. B. CLARKE (Waupun Canning Company, Waupun, Wisconsin): Inasmuch as this section is the only section supporting an office of Vice-Chairman, it has been recommended that this office be omitted in the future.

With that thought in mind your committee is pleased to nominate Mr. Richardson Dickinson, Jr., of Eureka, Illinois, as Chairman, and Mr. R. S. Thorne, of Geneva, New York, as Secretary.

CHAIRMAN MINTON: Are there any further nominations? If not, we will entertain a motion that the nominations be closed and that the Secretary cast a unanimous ballot for their election.

MR. HARRY HATFIELD (Colorado Food Products Company, Denver, Colorado): I so move.

The motion was severally seconded.

CHAIRMAN MINTON: It is moved and seconded that the report of the committee be adopted and that Mr. Richard Dickinson, Jr., of Eureka, Illinois, be our next Chairman, and Mr. Thorne be continued as Secretary. All those in favor signify by saying, "Aye." Contrary, "No." It is unanimously carried, and that is the order for the coming season.

The meeting adjourned at twelve o'clock.

Kraut Section

Tuesday Morning, January 21, 1930, 9:30 A. M.

L. S. Argall, Marshalltown, Iowa, presiding.

THE meeting of the Kraut Section of the National Canners Association convened at nine-thirty o'clock, Mr. L. S. Argall, Marshalltown, Iowa, presiding.

CHAIRMAN ARGALL: In order that the Nominating Committee may have an opportunity to make a choice while the section is in session, I will appoint the Nominating Committee now, and ask that they report just before the close of the section meeting. I will appoint as Chairman Mr. Martin Meter, and the two other members will be Mr. L. Flannigan and Mr. F. F. Sommers.

In view of the fact that Mr. Braithwaite of the Division of Simplified Practice of the Department of Commerce is endeavoring to distribute his time between several sections this morning, the Kraut Section has been asked to advance the discussion of the Simplification of Containers to the forepart of the meeting, so in order to relieve Mr. Braithwaite so he can go to other section meetings, we thought it desirable to discuss the Simplification of Containers first.

(See Mr. Braithwaite's report before the Wax and Green Bean Section.)

Mr. Braithwaite made the following interpolations while reading his paper:

I think at this point we will go right over to Mr. Hollingshead's list, so that you may get some idea of the sizes. It is the one sheet report attached to this report of our Survey:

"PRODUCTION OF CANNED SAUERKRAUT, 1929

"The Department of Commerce, at the request of the National Canners Association, has collected the statistics of the pack of canned sauerkraut for the past year. Of 146 canners listed in the National Canners Association Directory, 79 furnished pack figures, 52 reported no pack during the year, 2 were out of business or could not be reached by mail, and 13 replies were not received. It is believed, accordingly, that the census is very near the total production, as the firms which did not reply are nearly all very small.

Can Size	Cases
No. 1	33,172
No. 95	105,286
No. 2	499,875
No. 2½	2,024,271
No. 3	533,252
No. 303	187,684
No. 10	362,519
Gallon	44,079
Miscellaneous	1,014
TOTAL	3,791,152"

MR. BRAITHWAITE: You notice the can size there, and it is reported in cases, No. 1, No. 95, No. 2, No. 2½, and so on. I want to call your attention to the fact that over half of your pack is on the 2½ can, something that is very interesting to me, but it is an old story to you. Now, you will look at that, and I expect that at once you will come to some idea of just which ones you think you can retain and just which ones you think can be done away with. We are not going to discuss that right now. Later on, if you care to.

CHAIRMAN ARGALL: I am sure that everyone present appreciates how vital it is to the canning industry to eliminate as many sizes as possible, and it seems to me it is a question that should be freely discussed.

MR. BRAITHWAITE: We have helped and have promulgated over one hundred programs, around about a hundred and twenty-five simplification programs, for radically different industries. We have ramified this simplification idea in all kinds of industries. We find it is just as applicable to your industry, and I do not think there is any question that there are inherent advantages and economies that would accrue should you adopt a simplification program for containers.

CHAIRMAN ARGALL: It would seem that it would be in order, if there is no desire on the part of anyone to specify any particular size for elimination, to at least endorse the principle of the simplification of containers by a suitable resolution. Is there anyone present who would care to present such a resolution? The Chair would be gald to entertain a resolution of that kind.

MR. BRAITHWAITE: This report, gentlemen, has been worked out with the help of the National Canners Association.

MR. KRIMETAL: I move you that this report be accepted.

CHAIRMAN ARGALL: It is moved that this report be accepted. Is there a second to the motion?

MR. SHANNON: I second the motion.

CHAIRMAN ARGALL: It is moved and seconded that the report made by Mr. Braithwaite be accepted. Is there any discussion? If not, all in favor signify by saying "Aye." Contrary "No." It is so ordered.

CHAIRMAN ARGALL: I think I voice the consensus of the meeting when I express our appreciation to you for coming before us and presenting your report, Mr. Braithwaite.

MR. BRAITHWAITE: Thank you very much. (Applause.)

CHAIRMAN ARGALL: In letters that were sent out to quite a list of kraut packers, it was suggested that an effort be made by the Department of Commerce to collect statistics on the kraut pack of the past year. I should like to ask that Mr. Hollingshead make his report on the statistics that have been collected, and then any questions that you wish to ask you can ask at the close of his report. Mr. Hollingshead.

MR. HOLLINGSHEAD: There really is not anything much I can say on this, except the figures that have already been given out to everybody here. I want to thank the members of the kraut packing fraternity or industry for their co-operation and assistance. We are able to get material out faster than the Bureau of Census does because we do not insist, in a matter of this sort, on getting a report from every individual before we reach figures. I think it is quite probable that our total here probably represents considerably over ninety per cent of the pack of the past year. Now, that is more or less of a guess on my part, because there are some firms which did not report. It may be larger; some of the others I have talked to think it is. These figures simply show the total by cases. I did not make any effort to combine cans with some particular size case, and I did not separate it by States. If anyone is interested in that, I will be glad to have that done up to the point where the figures do not reveal any individual pack.

MR. HUBERT: On that figure with regard to the pack of 1929, is that the pack of 1929, or do those figures represent the kraut that was canned in 1929?

CHAIRMAN ARGALL: I believe they represent the kraut that was actually canned in 1929.

MR. HOLLINGSHEAD: That is my understanding of the way the questionnaire went out, the actual packing of kraut in cans during the year. The last official figure was published in October, 1927, and it was 3,100,000 cans, as I recall, which shows a rather considerable increase.

MR. SOMMERS: It would seem that this bids fair to be very useful information for us and I am wondering if a suggestion would be in order to ask for the seasonal pack the next time, in other words, how much kraut was cut down and intended to be canned. That would be the pack of the 1929 season.

MR. HOLLINGSHEAD: In other words, covering the last of 1928 and the first of 1929.

MR. SOMMERS: No, the last of 1929 and the first of 1930. That was the way our company reported. I guess we have always felt that the pack for a calendar year was very apt to be misleading, in that you might be a little bit late in finishing one year, and you might be a little early starting the next. It is the crop that we are interested in. We want to know how many tons were cut down, and how much is going to be available for the season.

CHAIRMAN ARGALL: I think it would be entirely in order to recommend the Secretary of the National Canners Association that when figures are asked for, they be asked to supply them in the manner in which Mr. Sommers has suggested.

MR. HOLLINGSHEAD: I can say, for my side of the job, that it is just as simple for us to get figures and do them up one way as another. The question arises, how do you want them. We are acting entirely as your agents and servants in the matter. This request came in, and simply asked that we get figures for the 1929 pack. I am perfectly free to admit that the seasonal side of the thing did not occur to me, as has been pointed

out, but if you want it done that way, and will give me the figures so I do not have to follow up by telegrams and call on secretaries of state associations, and so on, I will be glad to do the thing any way you want it. It happens to be a rather simple job. There are only seventy-nine firms reporting, and if all of them report which are apparently in business, that would bring it up to ninety-two. We can not force the figures to come to us, but if you will give them to us, we will give you the results any time you want them, and any way you want them. It is only a matter of a couple hours' tabulation.

CHAIRMAN ARGALL: Are there any other questions you care to ask Mr. Hollingshead? I might say that recommendation will be passed on to the Secretary of the National Canners Association so that statistics can be collected in that way.

MR. HOLLINGSHEAD: May I ask that you word the thing as specifically as possible, so that it may be incorporated in a questionnaire?

CHAIRMAN ARGALL: Yes.

MR. HOLLINGSHEAD: Thank you.

MR. SOMMERS: It would not complicate matters very much to ask the Association for the number of tons of cabbage or kraut which were put into bulk kraut, in addition to those canned figures.

MR. HOLLINGSHEAD: There is a question in my mind on which I want to get some information. I understand there is quite a large part of the crop which is prepared but not intended to be canned, and that many firms making kraut do not can it. They are usually very local, and sell their supplies almost in the neighborhood market. If there is any reason to believe that firms of that sort will report, I will be very glad to get those figures. As I say, on any of these things we will get anything you want in any way you want, if we can get them.

MR. SHANNON: Does not the National Kraut Packers Association already have those figures, and do not they collect those statistics you are asking for here? It seems to me if we are to follow the Simplification of Containers and the Hoover program for eliminating waste, and so forth, we are just duplicating the same thing that some other association collects.

CHAIRMAN ARGALL: Perhaps I am misinformed, but are those statistics available to all kraut packers, whether or not they are members of the National Kraut Packers Association.

MR. SHANNON: I am not sure. I know we do not happen to be members of the National Kraut Packers Association, and they were sent to us, unsolicited.

CHAIRMAN ARGALL: Perhaps Mr. Irons would be glad to enlighten us on that point.

MR. IRONS: Well, those statistics we gather are gathered, really, for members. Where they are passed out, it is up to the members to do that, but the association itself gathers the figures just for the members of the association.

CHAIRMAN ARGALL: Is there any further discussion? Are there any further questions you wish to ask Mr. Hollingshead? If not, then we wish to thank you, Mr. Hollingshead.

MR. HOLLINGSHEAD: You are very welcome, I am sure.

CHAIRMAN ARGALL: And we thank your department, also, for furnishing these statistics. (Applause.)

The topic of the next address is one which is of vital interest to all kraut packers, and I take pleasure in introducing Dr. J. C. Walker, the subject of whose address will be "Latest Developments in Breeding Yellows-Resistant Cabbage." (Applause.)

Latest Developments in Breeding Yellow-Resistant Cabbage

By Dr. J. C. Walker
University of Wisconsin

TWO decades ago yellows was undoubtedly the most destructive disease of cabbage in the region extending from southern Wisconsin to the Ohio River and from Iowa to the Alleghanies. Since that time it has jeopardized cabbage culture in areas beyond these boundaries such as New Jersey, Delaware, and Maryland to the east, Virginia and Kentucky to the south, Kansas and Missouri to the west. Its northern limits are apparently rather well fixed because of lower temperature means.

At about 1910 when its destructive character was clearly recognized the means of control through selection of resistant varieties was suggested and by 1915 work along this line had progressed to a point where the validity of this method had been demonstrated. Up to that time selection had been confined to the storage variety, Hollander or Danish Ballhead, and the resistant strain developed was called Wisconsin Hollander. Attention was next given to the needs of growers of kraut varieties. The selections from All Seasons were begun about 1915 and by 1919 the resistant Wisconsin All Seasons variety had been finished off and seed multiplication was started the following spring. The first large consignment of seed of this variety was harvested in 1921 and made available to packers and growers for use in 1922.

Wisconsin All Seasons has stood the test of eight years in severely infested cabbage areas and we have yet to hear a complaint because of lack of resistance. For the yellows districts it appears to be quite satisfactory as a late kraut variety. It was evident, however, as early as 1919 that a supplementary earlier variety would be necessary in order to spread the cutting season over the customary period. It was therefore decided to start selections from three early or mid-season varieties, then being used widely by kraut packers for the early cutting. These were All Head Early (flat), Copenhagen Market (round), and Glory of Enkhuizen (round). By the same methods as used with All Seasons and Hollander we had in our trials in 1923 selections of each of these varieties which were highly resistant and fair in type. It was obvious to us at the time that we should have more time to finish these off. However, it did not seem wise to hold them back from commercial use for an indefinite period. Therefore part of the stocks was saved for stock seed production and part was retained for continued breeding.

That which was used for increase you are familiar with. Seed in commercial quantities was available for use in 1927 under the names, All Head Select, Marion Market and Globe.

Since 1923 we have been trying to bring about fixity of resistance and more uniform and more desirable type. As is often the case in improvement programs of all sorts the first three quarters of the way may be taken in a few long steps, while during the last quarter of the way progress is slow and difficult to attain. So it has been with cabbage. In four years (1919-1923) we progressed from about 10 per cent to about 85 per cent resistance while it has taken six years (1923-1929) to go from 85 per cent to 100 per cent. However, much of the delay has been due to the fact that it was necessary to work out new methods. With the aid of these we could now do the same in much less time. Through the use of self-pollination and controlled cross-pollination we can now produce 100 per cent resistant strains in two or three years' time.

The more difficult task is that of combining good type with high resistance. The old method of mass selection has had to be replaced by the pure line method in which individual plant selections are self-pollinated and quality determined by progeny tests. By running these in large numbers it is possible to pick out lines which run most closely to the desired type. Experience has shown that uniformity in cabbage varieties can be greatly improved by this method. At the present time stocks of Globe and All Head Select are ready for multiplication in which much improved type is combined with 100 per cent resistance.

CHAIRMAN ARGALL: Are there any questions you would like to ask Mr. Walker with reference to his subject?

MR. HUBERT: When will the improved American Market be available to the kraut factories?

DR. WALKER: For the American Market we still have to grow stock seed from that particular lot of which I showed you the results. With the Globe, the Improved Globe is already growing out West.

MR. HUBERT: Will that be available for this year's use?

DR. WALKER: No, it will be planted next spring, but will not mature, of course, until next fall. The All-Head Select is ready to grow, that is, providing we do not have a seed failure in the meantime.

MR. HUBERT: That means All-Head Select will be available for planting this next spring?

DR. WALKER: If everything goes well with these new stocks, yes. Understand, gentlemen, that the quantity of stock seed, even of those, is limited, because we have carved down to the very best stuff, and rather than make a larger quantity by throwing in second-rate stuff we saved the very best and got as much seed as we could from it, but there is enough to make a planting. Now, we will keep that going. Next year a larger planting for stock seed will be made, and that should keep the thing going on a larger scale.

MR. SOMMERS: How many pounds of seed do you get, on the average, or how many ounces on the average, from a head?

DR. WALKER: A good average yield is less than an ounce when they are grown out of doors. Of course, we get a much lower yield in the greenhouse. But a pound of stock seed will plant three or four acres, which, under a good season, will bring back a couple thousand pounds, so after you once get stock seed it multiplies very rapidly. As far as cabbage is concerned, we are much better off that the pea men or the bean men, because cabbage seed multiplies very, very rapidly. We get a thousand-

fold very often, while the pea and bean men are lucky if they get an average of five or sixfold.

CHAIRMAN ARGALL: Are there any further questions you care to ask? I am sure, Dr. Walker, we appreciate your talking to us on this subject. It has proved very informative and interesting.

DR. WALKER: I appreciate your remarks, Mr. Chairman. I just want to say, further, that my office is at Madison, and I am at your service. I mean by that, if at any time you want to send in material to be identified, I will do the best I can. If you want me to come and go over your territory, I will do it if I can possibly get time to do it. Many of you know that, but I want you all to know it. We are here to serve you. I am working for you. (Applause.)

CHAIRMAN ARGALL: The topic of the next address is "Fermentation and Canning of Sauerkraut," by Mr. W. E. Vaughn, who is connected with the Research Laboratories of the American Can Company.

FERMENTATION AND CANNING OF SAUERKRAUT

By W. E. VAUGHN

Research Division, American Can Co., Chicago.

THE subject of this paper, "The Fermentation and Canning of Sauerkraut," is a very broad one, and one upon which literally volumes have been written, and it cannot be expected that I can do more than touch upon the high points of this subject during the time which has been allotted me. I am not prepared to present a mass of highly technical data, but rather wish to call your attention to a few facts which I trust may be regarded in the light of your own experience in the manufacture of sauerkraut.

RAW MATERIAL

As with any manufactured product, the quality of the finished article is a direct reflection of the raw material. Sauerkraut is no exception to this statement, inasmuch as the quality of the cabbage used is in a major way responsible for the quality of the sauerkraut obtained. In their studies of "Some of the factors which Influence the Composition of Cabbage and their Relation to the Quality of Sauerkraut," Drs. Peterson, Fred and Parmelee, of the University of Wisconsin, have found that sauerkraut made from late cabbage is of better quality than that made from early cabbage, in that the latter is often green and may produce a yellow kraut. In addition, it is their opinion that cabbage grown on upland soil usually makes better sauerkraut than that grown on marsh soil. It goes without saying, of course, that the best sauerkraut is obtained from cabbage which forms firm, compact heads.

STORAGE OF CABBAGE

As regards the storage of cabbage before cutting, little if any effect on the subsequent quality of sauerkraut is noticed if the storage has been at low temperatures, or even if slight freezing of the cabbage has taken place. If, however, freezing proceeds far enough that the tissue is mechanically injured, a soft, slippery kraut results. Cabbage which is subjected to high temperatures of storage, as may be encountered during August or September, is likely to become covered with a large number of undesirable micro-organisms. These micro-organisms, during the course of fermentation, may exert their influence towards the production of a very poor quality sauerkraut. There is a reduction of moisture in the cabbage during storage, but it is doubtful if the reduction in moisture will have as great an effect on the quality of the sauerkraut as some of the other factors listed above.

FERMENTATION OF CABBAGE

In the moral course of the manufacture of sauerkraut the cabbage undergoes what is known as a natural fermentation. Lactic acid producing bacteria are present on the cabbage when introduced into the vat, and their growth under suitable conditions results in the formation of sauerkraut. The character of the fermentation or cure which the cabbage undergoes is without doubt the greatest factor in the production of quality sauerkraut.

Under the present method of the manufacture of sauerkraut this fermentation is practically uncontrolled. Control of the cure involves control of the variety and chemical composition of the cabbage, the types and numbers of bacteria or other micro-organisms, the amount of salt added to the cabbage, the temperature of fermentation, the time of fermentation, and possibly other factors.

CONTROL OF FERMENTATION

At present care is taken to choose the right variety of cabbage and to grow it under suitable conditions, which in turn controls to a certain degree the chemical composition of the cabbage. The percentage of salt in the vat of cabbage is likewise usually regulated, as are sometimes the temperature and time of curing. At present there is practically no control of the types or numbers of micro-organisms in contact with the cabbage during fermentation.

The control of the types and numbers of micro-organisms during the fermentation of cabbage is far from a simple matter. Were those methods used by large industrial concerns for control of the fermentation of corn applicable to the control of the fermentation of cabbage, they would have doubtless been in use years ago. In the fermentation of corn mentioned above, the starch is separated from the other ingredients of the corn and sterilized by heat.

One particular type of bacteria, the growth of which during fermentation produces the product desired, is nurtured for five consecutive days at a definite temperature, with a view towards producing sufficient numbers for the inoculation of 40,000 gal-

B. E. BABCOCK, President
National Kraut Packers Association

lons of starch. The growth of these bacteria, preparatory to their introduction into the starch vat, is so rapid that during the first day it occurs in test tubes, the second day in one-quart flasks, the third day in ten-quart flasks, the fourth day in eighty-gallon tanks, and the fifth day in eight hundred-gallon tanks.

The eight hundred gallons of inoculum are then introduced into 40,000 gallons of starch and the fermentation completed within forty-eight hours thereafter. In this particular case the liquid products of fermentation are desired, and they are subsequently obtained by distillation.

As stated previously, I have not visioned the control of the fermentation of cabbage as being a simple matter. There are over 1,000 types of lactic acid producing bacteria, which may ferment cabbage to produce sauerkraut. In addition, other micro-organisms, such as yeasts, may be present on the cabbage and grow during fermentation if the conditions are suitable. Some of the micro-organisms may work during fermentation to produce high quality kraut, while others may have just the opposite effect.

EFFECT OF INOCULATION ON FERMENTATION

A great amount of research work on the effect of inoculation on the quality of sauerkraut has been done by various investigators, and especially so by the University of Wisconsin. Their work has resulted in a measure of success, but absolute control of the fermentation of cabbage has not been achieved by inoculation. One of the chief obstacles, I believe, in the control of the fermentation of cabbage has been the inability to remove the undesirable micro-organisms so that the fermentation may be dominated only by the bacteria with which the cabbage is inoculated. Although I do not find a direct reference to any attempt being made toward the sterilization of cabbage by heat, followed by subsequent inoculation, such a method would not appear feasible.

Washing of the cabbage with water, besides being desirable from a sanitary standpoint, in addition tends to decrease the

numbers of micro-organisms on the cabbage itself as it enters the vat, an important feature if inoculation is contemplated. Experiments with washed cabbage, which was subsequently inoculated with bacteria known to produce a very white and firm sauerkraut of good quality, were successful when conducted on a small scale, but were not as successful when attempted on a commercial basis. This was due undoubtedly to the contamination of the cabbage by undesirable bacteria, with the effect that the beneficial results of inoculation were partially destroyed. In general, however, even on a factory scale, the results obtained with inoculated cabbage were superior to those obtained with uninoculated cabbage.

TIME AND TEMPERATURE OF FERMENTATION

For two successive years the laboratory which I represent had the pleasure of co-operating with the University of Wisconsin and the Frank Pure Food Company, Franksville, Wis., in a study of the relation of temperature of fermentation to the quality of sauerkraut. Vats of cabbage were set up at temperatures of approximatelq 45, 55 and 75°F. Arrangements were made to record the temperatures in various portions of each vat during the period of fermentation. In addition, various other data were taken, including the number of bacteria and the acidity of various portions of each vat. Data were collected daily on each vat over a period of almost eight weeks.

Many interesting facts were discovered, with some of which you are undoubtedly familiar through the publication of this work in the Journal of Agricultural Chemistry. As was to be expected, the fermentation proceeded slowly in the vats at the lowest temperature, but rapidly in those of temperatures of 75°F. In the latter case it was found that shortly after fermentation started the temperatures in some portions of the 75°F. vats rose as high as 83°F. In addition, it was found that considerable differences in the numbers of bacteria and acidity existed in various portions of each vat. These facts suggest the advisability of circulating the brine in the vat, as is sometimes done in the fermentation of pickles with a view toward securing uniformity of fermentation throughout the whole vat.

Data on the number of bacteria showed that a primary fermentation occurred during the first few days, subsequently followed by secondary fermentation. This was indicated by the fact that the numbers of bacteria increased very rapidly during the first few days of fermentation, but as fermentation proceeded and the acidity increased, a second type of bacteria replaced the first type and carried on fermentation during its latter stages. It was confirmed by microscopical examination of the liquor or juice from the vats, which disclosed a different type of bacteria in the two periods of fermentation. Although inoculation work was not a part of this research, it thus appears that it would be desirable to inoculate with one type of bacteria for the primary fermentation, followed by another type for the secondary fermentation.

Of practical interest to you, as manufacturers of sauerkraut, were the results showing that cabbage which had fermented at temperatures between 55 and 65°F. produced the best quality of sauerkraut. This fact was apparent at the conclusion of the first year's work, and was substantiated in the work the following year.

You may be interested in the means we used for regulating the temperature of fermentation. As you know, sauerkraut of such a mass as that contained in a 30-ton vat is a good heat insulator. We decided that it would be much more difficult to attempt to control the external temperature than it would the internal temperature of the vat. Our results substantiated this in that external temperature changes either above or below the temperature at which the vat was maintained had little effect upon the temperature of the vat as a whole. The method consisted in heating the cabbage by steam as it passed from the cutter through a chute into the carts which conveyed the cabbage to the vat. Some condensate, of course, occurred during the heating of the cabbage, which in turn increased the amount of moisture in the vat. In no case was this considered excessive, and in all probabilities the presence of slightly more moisture than was normally contained in the cabbage was beneficial rather than harmful.

The time necessary for the completion of fermentation as gauged by the time that the brine in the vat reached 1½ per cent lactic acid was found for temperatures of 75°F. to be approximately two weeks for temperatures between 55 and 65°F. to be approximately four weeks, and for temperatures of 45 to 55° to be at least six weeks. These experiments were conducted during November and December in order that we might secure cabbage at temperatures slightly above freezing.

As can be readily seen, the control of all variables in the fermentation of cabbage cannot be accomplished by any simple method. Research work along this line, however, indicates that there are opportunities for considerable work in this field.

So much for the fermentation of cabbage towards the production of good quality sauerkraut. The canning of sauerkraut which follows the completion of fermentation has undergone some changes, especially with regard to filling the cans, within the last few years. I do not wish to precipitate a discussion on the merits or demerits of machine-filled kraut but I hardly feel this paper would be complete without some reference to this practice.

I might give one illustration of what may be accomplished with automatic fillers for kraut. With the permission of Mr. A. A. Huppert, General Manager of the Frank Pure Food Company, Franksville, Wisconsin, I should like to describe the methods practiced by this concern in the canning of sauerkraut.

The equipment used at the Frank Pure Food Company allows continuous maximum production with the minimum of labor. The kraut is preheated to above the sterilizing point, automatically filled into the cans, topped, closed and passed into a continuous cooler. Following cooling, the cans are dried, labeled, cased and the cases passed to a reversible continuous belt permitting them to be sent either to the warehouse or to the cars on the side track.

The total time for all these operations is less than thirty minutes, and of this time, more than three-fourths is used in cooling the cans. This fact is of great importance as will be disclosed in discussing hydrogen springers.

I consider such a line-up almost ideal in its possibilities. It, however, requires close attention to detail and a class of labor which understands how each part of the system must function. If the closing temperature falls, understerilization may result or if the cans are packed into the cases without being thoroughly cooled, hydrogen springers may develop within a short time.

HYDROGEN SPRINGERS

If I may, I should now like to call your attention to a subject discussed before this section in 1927, but of sufficient importance to bear repetion—that of hydrogen springers. You may consider hydrogen springers in the light of a necessary evil, since if given time they will occur, but with a few simple precautionary measures you may do a great deal in minimizing their occurrence.

In the first place, regulate the fill of kraut in the cans to the minimum drained weight suggested by the Bureau of Chemistry. Our experiments have shown repeatedly that overfilled cans develop into hydrogen springers very rapidly, whereas underfilled cans develop hydrogen springers at a much slower rate. The minimum drained weights, you know, are for No. 2 cans, 16 oz.; No. 2½ cans, 23 oz.; No. 3 cans, 27 oz., and No. 10 cans, 80 oz.

Secondly, close the cans with the highest possible closing temperature. The high closing temperature results in a high vacuum in the can after cooling. While no definite closing temperature may be recommended, closing temperatures above 150°F. are desirable.

In the third place, the cans should be topped just before closing. This procedure results in a definite headspace in the can through the removal of a small amount of the liquid. The headspace is, of course, desirable in providing a reservoir for the hydrogen developed during the storage of the cans.

Thorough cooling of the cans is a fourth precaution towards inhibiting the development of hydrogen springers, inasmuch as it minimizes the attack of the acid on the container. Water cooling, followed by air cooling over night, before the cans are cased or stacked in blocks in the warehouse, will be of great value.

In line with the last precaution is that of storing the cans at as low a temperature as possible during the time they are in your care. Elevated storage temperaturess as may be encountered near steam pipes in highly heated buildings are to be avoided.

In conclusion, and in resume, it is apparent that, although much work has been done on the problems connected with the fermentation and canning of sauerkraut, there is still opportunity for considerable more work. The consumption of canned sauerkraut has increased markedly through co-operative advertising. It may increase as much through co-operative research. Your part lies in putting the results of the research to work in your factory. Why not make research pay you dividends?

CHAIRMAN ARGALL: Are there any questions that you would like to ask Dr. Vaughn?

A MEMBER: Dr. Vaughn spoke of a continuous process, and yet he spoke of leaving a can over night to air-cool. In a continuous process, have you any way to suggest to get the cans completely cooled before they are cased?

DR. VAUGHN: It is difficult. If you are going to have a continuous process, there is hardly any way you can let them stand over night. But if you are going to case them, you should have them thoroughly cooled before they are cased, because there is no doubt, storing them in these fibre cases particularly, storing them in blocks, they may remain at temperatures of 80, 90 or 100 for days after that, and hydrogen forms very rapidly at those temperatures.

THE MEMBER: Have you worked out any plan for artificially drying, so that if you should cool them completely in water, would it be practicable to artificially dry them?

DR. VAUGHN: We have no recommended procedure for artificially drying cans, but we have had very little experience with any rust developing in cans. That is frequently heard of, and it is, of course, a possibility. There are several arrangements that could be fixed up, blowers over steam pipes, something of that sort, whereby it is possible to work out the drying of the cans, or at least to assist in the drying of them, whether or not you would remove every bit of water.

CHAIRMAN ARGALL: Are there any further questions? Is there any discussion?

MR. SOMMERS: I should like to ask Dr. Vaughn if washing the cabbage had any effect on the fermentation time?

DR. VAUGHN: I think washing cabbage without innoculation would have an effect. You have to decrease the numbers of bacteria there to such an extent that you may not, in some cases, start it as well as you would if you do not wash the cabbage.

MR. SOMMERS: Might you overcome that possibility by washing with warm water?

DR. VAUGHN: You might.

MR. SOMMERS: Would that raise the temperature of the cabbage sufficiently to help fermentation?

DR. VAUGHN: It probably would.

CHAIRMAN ARGALL: Are there any further questions? If not, we will proceed with the last speaker on the program. The next topic is one which I know is of interest to all kraut packers, "The Sale of Kraut Juice." That topic will be discussed by Mr. C. P. Lathrop, Rochester, New York, who was formerly connected with the National Preservers Research Laboratory. Mr. Lathrop.

THE SALE OF KRAUT JUICE

By C. P. LATHROP
Rochester, New York

IN the sale of sauerkraut juice certain questions must be answered—its economic position, the source and character of the juice, the particular methods of handling, the type and size of container, the demand of the ultimate consumer.

In the sale of kraut juice everyone in the kraut industry is or should be materially interested. The juice on an average constitutes approximately 15 to 20 per cent of the contents of a kraut vat. The food value and flavor of the juice is nearly identical to the sauerkraut itself. Without a sales outlet for this large quantity of juice, it becomes nearly a total loss, thus throwing a greater burden of cost on the sauerkraut alone. Sauerkraut juice should be made to share its portion of the expense for raw materials and operation.

It is only common sense that no manufacturer can increase or even maintain his volume of sales through repeat orders of any food product which is distasteful or lacking in appeal to the persons who have attempted its consumption. I understand the volume of sales of kraut juice has greatly decreased over the past year. You are back again to the old practice of dumping your surplus down the sewer. Why did you once enjoy such a satisfactory volume of sales for your kraut juice? By advertising comparatively new product to a receptive and curious public. Why did you not maintain the good will and consumptive demand initially created? Your own failure to pack a uniform and excellent quality product.

Some of you are too willing to lay the blame on those who packed the juice in glass. My observations convince me the packers employing the old tin can have contributed their full share.

We are not here to judge our fellow packers. The conditions which now exist were inevitable. The situation was rushed into blindly before the fundamental facts concerning the nature of sauerkraut juice and essential packing methods were known. A great quantity of improperly packed juice was placed on the market, backed by enthusiastic advertising. The product went bad. Some poor juice probably was packed also. A real sales resistance to your product is the result.

Yet the situation is very far, indeed, from being hopeless. Sauerkraut juice freshly drawn from well made, properly fermented sauerkraut, is a very delicious and appetizing beverage of many healthful characteristics. A product naturally possessing such distinctive merits is bound to meet with public favor, provided such a product is placed in the hands of the public. In too many cases the product on the market today is a very, very different and inferior article.

You have been manufacturing sauerkraut for many years. You enjoy an excellent reputation for its quality. Your sauerkraut juice is the by-product resembling in flavor and composition when freshly drawn of the excellent qualities of that sauerkraut. Your problem is not how to make excellent quality sauerkraut juice. It is how to handle and package it after drawing it from your sauerkraut so as to deliver it in packages as nearly as possible in flavor and smoothness of taste to the fresh raw juice.

Before we can intelligently pack sauerkraut juice to retain or possess these valuable characteristics, certain facts regarding the action and character of kraut juice must be fully understood. You are quite familiar with the brown color and peculiar flavor sauerkraut acquires all too quickly when left open

A. E. SLESSMAN, Vice-President
National Kraut Packers Association

to the air. That is why you are so very careful to keep your vats completely covered and protected from the air. Sauerkraut juice acts the same way.

I personally observed one large kraut packer collect his daily yield of kraut juice in an open wood tank over a period of a week, then pack it all on Saturday. That juice was damaged before it was packed. Canners of peas, corn, tomatoes, tomato pulp, and so forth, even kraut packers, could not and would not attempt to handle or abuse or destroy the quality of their products by such treatment.

Since kraut juice is so quickly injured by the oxygen of the air, it is absolutely necessary to pack the kraut juice into its final package after drawing it from the vats, and to rigidly exclude air and oxygen from the container in which it is packed. Failure to observe and provide for this requirement probably has caused more spoiled kraut juice and done more to injure sales and destroy public good will than any other one thing.

Sauerkraut juice, when packed in tin and given a fairly long exhaust at 160 degrees Fahrenheit prior to sealing, has most of the oxygen eliminated. The acid and salt of the juice react with the tin of the can, which in turn reacts and so combines with the small remaining quantity of oxygen in the can as to eliminate its injurious action on the sauerkraut juice.

Those who packed in glass, and took no greater precautions than the packers in tin cans to eliminate the last traces of oxygen, did not have any tin from their packages to come to their rescue. As a result their product usually ultimately turned brown and cquired the characteritic objectionable taste.

Again I repeat, fresh raw kraut juice is very appetizing. This browned juice borders on the terrible, while the sauerkraut juice as packed in tin falls far short of a satisfactory product. The latter necessarily is devoid of the carbon dioxide gas which materially assists in making the raw juice so palatable, and very frequently possesses a distinct metallic taste, while the sediment in the bottom of the can of unfiltered juice is bitter.

Two years ago, while I was cannected with the National Preservers Association, several members of the kraut industry,

through that association, employed my services and those of my assistant to undertake experiments in packing sauerkraut juice to improve the packing methods then employed. Representative samples of the pack of most of those in the kraut industry were examined and analyzed. Considerable correspondence and interviews with those packers were undertaken. We read about all the literature in the Washington library on the subject. We made experiments upon the relationship in water solution between salt and the two acids, lactic and acetic, found in kraut juice. We discovered that three to four parts lactic to one part acetic was best (about the same as is normally present in kraut juice), and twice the quantity of salt to acid was required to balance each other in taste, otherwise the product was acid or salty in taste. We also found one and one-fourth per cent acid, two and one-half per cent salt, gave the most palatable combination.

Then we applied this knowledge to our sauerkraut juices. Those too salty were treated with the lactic acid and acetic acid to the point where the acid was in ratio of one to two and one-quarter salt. Those too acid received the necessary addition of

ROY IRONS, Secretary
National Kraut Packers Association

salt unless the salt were already high, in which case the excess acid was neutralized with calcium carbonate. A vast improvement in taste and flavor resulted. We found juices with about 1.2 per cent acid as lactic and 2.5 per cent to 2.6 per cent salt were the most desirable from taste.

Next we experimented on the filtration or clarification of sauerkraut juice. The commercial bottled juices presented a very unappetizing appearance. They had a very heavy white deposit of dead lactic acid bacteria which, on the grocer's shelf, more nearly resembled in appearance the familiar cloudy household ammonia than any appealing beverage.

We discovered that the fresh raw juice we received fresh and cold in kegs by express from the kraut packers filtered with difficulty and never came clear. Also, this filtered juice became increasingly cloudy when heated to 145 degrees Fahrenheit. However, the juice so heated subsequently filtered brilliantly clear easily through pulp, whether filtered either cold or hot, and did not subsequently become cloudy on the reheating required for sterilization.

We noticed the more pleasing taste of the freshly received raw juice, than the same juice after heating, whether filtered or not. Since the heating drove off the carbon dioxide gas we recarbonated the juice by first removing the air above the cold liquid with a vacuum pump, then applying carbon dioxide gas under pressure. The results were astonishing. The attractive palatibility of the juice was restored.

We found carbonation of sauerkraut juice decreased the salty taste and enhanced the desired acidity or tartness, and made a smoother blend of acidity, salt and kraut flavor.

Since carbonated kraut juice cannot be marketed in tin cans, due to swelled ends, and an unfiltered, cloudy juice in a bottle is unsightly and unattractive, our problem was to pack a brilliantly clear, carbonated sauerkraut juice in a glass bottle.

We were told kraut juice could not be packed to keep in glass over ninety days. We nevertheless packed the juice two years ago in glass. It is as fine and perfect now as it was the day packed. The carbon dioxide gas of the juice caused a creamy foam to rise in the bottle and drive out the air. After sealing with a crown cork we sterilized the filled bottles thirty minutes at 145 degrees Fahrenheit. They have kept perfectly clear, have a fine flavor and are light in color, for two years, approaching very closely in quality the original fresh raw juice, while the canned product would be flat and metallic.

In summary, the sale of the by-product, kraut juice, is an economic necessity; only the juice from high quality kraut, preferably from the fall drawn juice, should be packed. The acidity or salt content should be properly balanced when required; the juice packed promptly into containers after drawing from the vats; the air rigidly excluded from the sealed packages, and the product properly sterilized after sealing.

In addition, the glass container bottle avoids the metallic taste derived from the tin can and permits the carbonation of the juice so as to most closely restore it to the attractive flavor and taste of the fresh raw juice. When packed in bottles, a properly filtered, brilliantly clear juice is required.

Packing in tin is cheaper and more fool proof than packing in glass. Yet the glass bottle gives the opportunity to pack a better quality product than tin, and juice packed in tin results in a very inferior product if carelessly handled in packing. I should suggest the use of a green tinted bottle and a size permitting its consumption before deterioration due to oxidation can take place after opening.

The successful merchandising of ginger ale, for example, would not have happened if an unsightly heavy precipitate appeared in each bottle, or if the flat, uncarbonated beverage with a heavy sediment were packed in tin. You must spend the money to install the proper carbonating, filtering and bottling equipment to put over sauerkraut juice in competition with other beverages on the market.

I desire to thank those members of the kraut industry who have so kindly assisted me in collecting the material. I should like particularly to refer to the September, 1927, issue of the "Glass Container Magazine," an article by Dr. Ayers, and also an article appearing in the August 31, 1929, issue of the "Canner" magazine. (Applause.)

CHAIRMAN ARGALL: This is undoubtedly a subject which merits comment and discussion. It certainly merits the comments that Mr. Lathrop has made with respect to the quality of considerable kraut juice that has been marketed in the past. Would anyone care to make any comments? Or would anyone care to ask Mr. Lathrop any questions? It seems to me this is a subject that does invite discussion. If there is no discussion or questions, I will ask for the report of the Nominating Committee at this time.

THE ELECTION

For Chairman—A. A. Huppert, Frank Pure Food Company, Franksville, Wisconsin.

For Secretary—H. G. Pressing, Widlar Company, Norwalk, Ohio.

CHAIRMAN ARGALL: You have heard the report of the Nominating Committee. Is there a motion for its adoption?

MR. J. M. STROUP: I move the report be adopted.

The motion was seconded.

CHAIRMAN ARGALL: It is moved and seconded that the report of the Nominating Committee be accepted. All in favor signify by the usual sign. Contrary, "No." It is so ordered.

I presume it is in order for someone to make a motion instructing the Secretary to cast a unanimous ballot in favor of the nominees.

MR. SOMMERS: I so move.
The motion was duly seconded.

CHAIRMAN ARGALL: It is moved and seconded that the Secretary be instructed to cast a unanimous ballot electing Mr. Huppert, of the Frank Pure Food Company, as Chairman of the section for the following year, and Mr. H. G. Pressing, of the Widlar Company, of Norwalk, Ohio, as Secretary of the section. All in favor of the motion signify by saying "Aye." Contrary, "No." It is unanimously carried.

The meeting adjourned at eleven-fifty o'clock.

Wax and Green Bean Section

Tuesday Morning, January 21, 1930, 9-30 A. M.

S. H. Shriver, Westminster, Maryland, presiding.

THE meeting of the Wax and Green Bean Section of the National Canners Association, convened at ten-five o'clock, Mr. S. H. Shriver, Westminster, Maryland, presiding.

CHAIRMAN SHRIVER: The first business on the program this morning is the oppointment of the Nominating Committee. I want to appoint on this Committee Mr. Gleason Rawlins and Mr. E. P. Nicholson, if they will be so kind as to serve.

I think most of us here have had a good deal of knowledge concerning the Mexican bean beetle that has been causing a great deal of trouble in the past year or two; if not knowledge from personal experience, at least we all know what he can do and how harmful he is to the bean industry. There has been a great deal of work done in attempting to control the bean beetle. In some cases I know it has been successful; in others, I know it has not been so successful.

Mr. Ralph Dulany of Fruitland, Maryland, has had a great deal of experience in controlling the bean beetle and he is going to give us his experiences this morning.

Practical Control of the Bean Beetle

By Ralph O. Dulany
Fruitland, Md.

I ASSUME that the Chairman's reason for asking me to speak on this topic was not so much that he thought I was qualified to give a comprehensive address on the subject, but that I might present the viewpoint of a small canner whose crops were grown on contract on rather widely scattered farms. We have had a problem, I assume, that is considerably above the average in difficulty. We contracted last year about 150 acres of stringless beans with 100 growers, and 650 acres of lima beans with 133 growers. The average stringless bean grower, therefore, had one and one-half acres, and the average lima bean grower five acres.

We had our first contact with the beetle in the summer of 1928, when stringless beans were nearly done. We were advised that the spread of the beetle had usually been so slow that we weren't likely to have any commercial damage until the third year. However, just to make certain, we at once took steps to find out how to combat it, and that season bought two dusters. The beetles multiplied much faster than we expected, and we had to put our dusters to work almost immediately. Our results at first were almost negative. Our second trial, however, seemed to give better results. However, after a short flurry of activity, trouble from beetles practically ceased for the season.

Naturally, we sought all available information before the 1929 season, and found there were plenty of places to get it. We received a great deal of help from bulletins, from talking to experienced canners, from the canners' short course at the University of Maryland, and from conventions. I recall particularly that the addresses in this section last year by Mr. O. M. Watson and Dr. Neale F. Howard, U. S. Department of Agriculture, were very helpful, indeed.

Most authorities said to spray rather than to dust. This was exactly what we didn't want to hear, because we already had some dusters and knew that dusting would be much the simpler treatment. Moreover, our experience in 1928 with calcium arsenate-lime at three cents a pound indicated that dusting was fairly cheap. This situation was very radically altered by evidence that calcium arsenate-lime (1 to 7) was unsafe under certain conditions, and the recommendation was changed to a calcium arsenate-copper-lime dust. We found that this material would cost more than double the price of calcium arsenate-lime. Our conclusion finally was that we would have to try both dusting and spraying, but that it would be safer to put our dependence mainly in spraying.

We purchased two sprayers, one four-row with 150-gallon tank, and one six-row with 200-gallon tank. During the season we used the two sprayers and one duster constantly, and held one duster in reserve. Incidentally, we had little occasion to use the latter.

The most pressing problem was that of water. Naturally, we couldn't see any sense in letting a sprayer remain idle while someone went off to look for water for it, so we decided to mount a tank on a truck and use this outfit to haul water to the sprayer, so that the water would be alongside whenever the sprayer was empty. As usual, one thing called for another, with the result that we had to get a gasoline engine and a pump for each truck to fill the tank with water.

Finally, we had to devise some way of getting all this equipment around. We have a great many dirt roads and some pretty bad ones. It seemed unthinkable to pull the sprayer behind the truck ,with the inevitable jolting that would result. Finally, with the help of the John Bean Company, we devised a sort of trailer on which we loaded the sprayer and hooked it on behind the truck. This trailer consisted of an iron frame mounted on pneumatic tires. The frame was underslung so that it stood only about eight inches from the ground. We backed the sprayer up to this trailer and rolled it up on skid boards, and then fastened it securely with chains. This wasn't as easy as it sounds, by any means, and occasioned a lot of hard work and consumed quite a bit of time. I know we can improve on it this season.

Anyhow, we had our outfit complete at last. The sprayer man hooked his trailer and sprayer behind his truck and drove to the farm. The farmer supplied the team for the sprayer and drove it, while the sprayer man went back and forth to the water supply and kept the outfit supplied with water. There is no need to tell you that this scheme didn't work smoothly and efficiently all the time; as crude and wasteful as it was, however, it did get results.

The problem of water supply was a stiff one. There were two or three tidal streams in the territory from which it would have been easy to draw the water. We sent away samples of this water and learned that it was too salty to be entirely safe. We then sent all over the region and noted the location of windmills, tanks, open wells, ponds, etc., that we might use. This was all fine and should have worked. When the need arrived, however, our section was so completely dried up that many of these sources failed, and I found that our boys were getting water out of the streams after all. I held my breath and wondered what the result would be, but I couldn't suggest anything else to do, and therefore let them go on ahead. So far as I know there was no bad effect as far as the crop was concerned. Probably we will find out later what the salt water did to the machinery.

You will see that we went about this in a paternalistic sort of way, doing everything for the growers. We came to this decision because they were all totally ignorant of what to do. Furthermore, they didn't have any equipment, didn't know what to get, and had no money with which to get it. For the sake, therefore, of making certain that everything humanly possible would be done, we undertook the whole job, and what a job it was!

We employed a man to keep constantly on the move and visit all the fields, making plans for the two sprayers and one duster. Each night he gave the operators their schedule for the following day, and kept in touch with them the best he could while they were at work. The duster, being the lighter machine, was used where farmers' teams were not strong enough to pull the sprayer and was also used for scattered fields away from the main territory.

In spraying we used magnesium arsenate; for dusting we used a mixture of calcium arsenate-monohydrated copper sulphate-lime in the familiar proportions of 20-20-60. We gave specific instructions that they were to use two pounds of magnesium arsenate to 100 gallons of water per acre for spraying, and from 12 to 15 pounds of dust per acre in dusting. We soon discovered that the sprayers were using three pounds of magniseum arsenate to 100 gallons of water, and the duster around 20 pounds of dust per acre. Of course, we began to howl about this waste of material. All four of the men on the job, however, stoutly maintained, and to this dav insist, that they couldn't get results with the amounts we told them to use. They gave numerous specific occasions on which the recommended amounts did not stop the beetle, and the larger amounts were absolutely effective. I yielded, although I wondered, and I am still wondering.

Somehow we got through the season and saved the crops. There were very few cases in which the crop was seriously damaged where anything like reasonable precautions were taken. At the same time our section had more beetles than any other part of the state. Fields of market beans that were not treated were absolutely eaten up, and in one or two cases a similar fate was met in our contracted fields where the farmer refused to do anything. There is hardly any doubt that we would have lost at least two-thirds of our crops if we hadn't protected them, and in addition bred untold millions of beetles to plague the whole community another year. I am happy to add my testimony to many others that the treatments recommended are effective against the Mexican bean beetle.

You are bound to ask, as I myself have done many times, whether spraying or dusting was more effective. In making some comment on this matter please understand that I am giving one viewpoint and the result of one year's experience, and won't attempt to say that this is the whole truth. Our belief is that spraying is absolutely effective. Really our men say that spraying stimulated the vine growth even where no beetles were present. Some of our farmers are of the same opinion. We found that the rain didn't wash it off, even though in a few cases a hard rain followed almost immediately after we finished spraying. Dusting was effective in the majority of cases. There did come reports now and then from farmers who blamed the dust for the dropping of leaves and the burning of plants and other things that were noticed after dusting had been done. In many cases we were able to show that untreated fields had acted about the same way at the same time. So no bad effects were proved as a result of dusting.

The question of relative cost of spraying and dusting, of course, is an important factor. I don't want to give here the comparison between our total cost of spraying and dusting per acre, because the manner in which we used our duster wouldn't afford a fair basis of comparison, since we sent it to the outlying places inaccessible to the sprayers.

In regard to investment, our investment per spraying unit (including trailer, tank, etc.) was three and one-half times the investment per duster. Obviously, the difference in depreciation is considerable, and becomes even more favorable to dusting if experience proves that you can dust more acres a day than you can spray. Incidentally this was not our experience, for the reason given above.

The difference in the cost of material is heavily in favor of spraying. Three pounds of magnesium arsenate cost us 63 cents, while 20 pounds of copper-limedust cost $1.50. We find that the total cost of spraying, which included the material, the man with the truck, the supervisor and depreciation on our equipment, was $2.99 per acre per application.

Naturally cost figures very greatly, and any effort to reconcile several canners' figures will result in a headache. One canner reported to the University of Maryland that his dusting cost $1.07 per acre. Another reported dusting at $1.50 per acre. A third, who used both methods, said it cost him $3.71 per acre to dust and $2.97 to spray.

We were disappointed in the number of acres we could treat per day. In the way we handled the matter there was inevitably much time lost in going from farm to farm, loading and unloading the sprayer, failure of the water to be there in time, etc. Even considering the time that the sprayers were actually at the farms, we found that we only averaged 1.53 acres per hour through the season. If we had realized this situation beforehand we would have been scared into buying twice the equipment we actually bought.

However, this condition was offset by the fact that we didn't have to do as much spraying per acre as we anticipated. In spite of the fact that the beetle was so everlastingly active in our territory, there were quite a few fields that didn't have to be treated at all. In caring for 800 acres we treated a total of 902. A few fields were sprayed three times—very few. The balance were sprayed either once or twice. This was a great relief after our anticipation that every acre would have to be sprayed two and probably three times.

Our supervisor decided early in the game that he would not go back and spray a field again at any stated interval, but would spray any field when he decided it was necessary. This proved, I think, to be a wise decision, and it was responsible for the fact that many fields were sprayed only once.

Early in the year we found beetles very active in some fields where the beans had just come up. We hesitated considerably at treating plants so young. There seemed nothing else to do, however, and we were gratified to find that there seemd to be no bad effects. It is our judgment now that, no matter how young the plants are, it is safe and wise to spray them if the bettle is bad.

We feel that the greatest good can be accomplished if spraying is begun in the spring just as soon as adult beetles appear in large numbers, without waiting for them to lay eggs, much less waiting for the larvae to begin to appear. This we give only as an impression after one year's work. We do feel that a vigorous and thorough attack on the adult beetles before they have had a chance to lay many eggs is a good way to save many hard days' work later in the season.

It is universally recognized that great good can be done by thorough plowing after the bean crop has been picked. The plowing experiments of Dr. Chapman, entomologist of the Virginia Truck Experiment Station, might well be mentioned. He estimated the population of a heavy infestation to be 1,200,000 beetles. Plowing was done following disking, and by using a 14-inch plow no beetles were able to emerge. Where disking was left out, 7,000 and 9,000 beetles, respectively, on two plots were able to emerge. Where an 8-inch plow was used, without previous disking, 65,000 beetles were able to escape.

I believe it is extremely important in any discussion of this subject to say that spraying or dusting should be stopped before beans begin to form. This applies equally to lima and stringless beans. On the one hand, if the beans are protected up to that time, they will almost always mature the crop without commercial damage. On the other hand, and much more important, is the fact that we are dealing with arsenic, which is a poison, and no grower or canner can afford to run the slightest risk of contaminating his product. If the choice had to be made, it is far better to let the beetle destroy the field than to spray after the beans have been formed.

In closing I want to pay tribute to the wonderful support the canners and growers have received from all agencies qualified to give us advice on this matter. The previous work of Dr. Neale F. Howard and a number of the experiment stations had brought out all the information that was necessary. This experience was instantly at the command of every grower and canner who suddenly was called on to fight this pest, and it was made available with the utmost efficiency. We in Maryland are eternally in the debt of Dr. Howard and his assistants, all of the staff of the University of Maryland; Mr. Woodbury, of the National Canners Association, and others. I know very well what disaster would have befallen us if their advice had not been given us so freely and cheerfully.

DR. DULANY: Mr. Chairman, I want to add just this obvious comment that since this is an experience of only one canner, there may be other canners that have had, in some cases, the opposite experience. It seems to me if the opportunity is givn for them to state their experiences, that it might possibly correct some impressions I may have given that I thought were correct but perhaps were not correct.

CHAIRMAN SHRIVER: Mr. Dulany, in that regard, will you perhaps lead us in a little discussion, and there might also be some who want to question you.

If anyone has any questions or their experiences to give us, we would be delighted to have them at this time. We have allowed plenty of time for discussion.

MR. RAWLINS: What amount of spray did you use?

MR. DULANY: Eight hundred pounds. We have found that string beans can be sprayed when in bloom without obvious damage if the pressure is reduced to 200 pounds, but that information is so indefinite I didn't put it in.

MR. TAYLOR: Mr. Chairman, our experience might be of interest to you. We first saw the beetle in 1927 and we made preparations to spray in 1928. Of course, I know Stockley Brothers in Tennessee, and several others, had it for several years before we did. All our information comes from Dr. Howard's pamphlet and I don't think we have found any information since that was not covered there.

We decided on spraying because it seemed that dusting was not effective under special conditions. Ours, however, is a somewhat different situation. We grow limas—we grow all our own limas—and our fields are concentrated and we didn't have to carry our equipment around. We had two underground gasoline tanks costing about $28 apiece, and these tanks held about 550 gallons. We had a well in the center of the field. We mounted a little wooden tower on an old ton and a half truck. We used a little gasoline engine and pump to fill the tank at the well, then we backed the truck up to it; that was high enough so that the water would flow freely into the tank. We backed the truck up and in a matter of five or ten minutes filled the tank. We had a two or three inch connection (I forget which), then we took the truck right out to the field where the sprayer was and it was only a matter of three to five minutes until the sprayer was filled.

We found we got about 20 acres a day in about a 10-hour day for spraying. Our fields run anywhere from 30 acres to 68; we haven't any small fields at all. We found we got as much as 25

acres a day, and we used two pounds of magnesium arsenate to 100 gallons of water. Of course, we had no expense of supervision and we figured our spraying only cost us about a dollar per application per acre. I will admit I did most of the figuring in my head, as most canners do, and I may have slipped up a little. (Laughter.)

CHAIRMAN SHRIVER: Mr. Dulany, I wonder what you got on hillsides this year?

MR. DULANY: I don't know about that. We don't have any hillsides; ours is pretty flat country.

Of course, it is quite clear I didn't go into any details as to how to do this work; that is all thoroughly covered in a great many publications. I happened to bring with me some publications from the University of Maryland on that subject on the chance somebody might be interested and would want some of them.

MR. COLLINS (Ohio): What was your dusting cost per acre per application?

MR. DULANY: I didn't figure that as whatever I might say would be totally misleading.

CHAIRMAN SHRIVER: Gentlemen, I want to thank Mr. Dulany for his very interesting talk here, which I know has been enlightening to us all. I might say that this program has been made up with this idea in mind: To hear of the practical work that was done in the past season from the theory we got here last season, and then to take up a little further theory.

We have one more talk on the practical side of bean growing and Mr. O. M. Watson, County Agent, Tennessee Agricultural Extension Service of Newport, Tennessee, whom I think most of us remember from last year, is going to give us a few minutes on that. Mr. Watson. (Applause.)

Practical Problems of Bean Production

By O. M. Watson, *County Agent*
Tennessee Agricultural Extension Service, Newport, Tenn.

"MANY mikle make a muckle" may be very appropriately applied to the growing of our bean crops. There are many practical problems, each apparently small, that must be considered by the bean grower. Careful attention to practical details should show a reasonable profit in growing the crop, while the neglect of these details may mean a loss.

The grower, whether he is a farmer, growing under contract, or the canner himself, must be able to produce the crop at a profit if he is to continue a satisfied grower. I am sorry to say that I have met canners who did not seem very much concerned about the returns to the contract grower. Like the little boy eating an apple, when told by an elder to "look out for worms," replied, "When I'm eating apples the worms gotta look out for themselves." However, I am glad to say more attention is being given to the grower each year. Particularly since the advent of the Mexican bean beetle.

If by closer attention to cultural methods, we can increase the yield, without increasing the cost, to a point that would bring an additional $5.00 per acre, it would mean more than a quarter of a million dollars extra profit to the growers of green and wax beans for canning. Bean growers are not, by any means, asleep on the job. It is very interesting to note that with an increase in green and wax bean acreage of more than 63 per cent, from 1927 to 1929, the average yield per acre of 1.6 tons has been maintained, and this has been done under adverse weather conditions and a very rapid spread of the Mexican bean beetle.

The first and most important problem in growing a bean crop is the soil. It is not so much the exact kind of soil, but the condition of that soil. Briefly I will try to define a desirable bean soil—a good garden soil, one that is well drained, rich and well manured; a soil that is loamy and full of life. We are wasting time when we try to grow good beans on poor or badly run down soil. We need a friable soil, from which the young seedlings may easily push out. Thorough drainage, both of the surface and the subsoil, is a most important factor. We cannot hope for a good stand when we plant on cold, soggy soil, and we know that the bean plant cannot stand wet feet. We should also avoid lands that are likely to overflow, or fields in which depressions occur, that will pond during heavy rains, or continued wet spells. We must secure and maintain a full stand if we are to hope for maximum yields.

A loamy soil is one which contains organic matter or humus. As the humus is increased in soil, the capacity of that soil for absorption and holding of water is increased. In our program of planting or rotation, we should see that a crop or manure is turned under, preferably the preceding year. While good drainage is necessary, a constant supply of moisture is all important in securing good pods, with tender, juicy tissue.

Thorough preparation that will insure a fine seed bed is absolutely essential. The bush bean is a very quick crop, and a large part of the tillage can be done before planting. It is poor economy to commence planting on a poorly prepared seed bed. We cannot hope for a good stand on poorly prepared land.

Although the bean is a legume, which has the power to take nitrogen from the air, we cannot consider it as such. If we are growing field beans, which are allowed to mature in the field, it would be different. There must be an abundance of quickly available plant food from the time the seedling comes up until the picking is finished. The vines must be green and vigorous up to the last picking if we are to secure high quality beans.

We cannot undertake to make a chemical analysis of our soils and add just enough of each element of plant food. On good soil, common practice has shown that an application of 400 to 500 pounds of a high grade, complete fertilizer is desirable. This fertilizer should contain 2 to 4 per cent of quickly available nitrogen, 12 to 15 per cent of phosphate, and 5 to 6 per cent of potash. This may be varied to suit local needs. The supply of phosphate and potash should always be put in before the crop is planted, as it is not feasible to add these elements as a top dressing. Nitrogen, however, may be added as a top dressing, when needed. Some objection has been made to a top dressing of nitrate, on the ground that the pods become too large. This may happen when there is a thin stand or the application is excessive. With early plantings and cool weather, or on light soils when we have heavy rainfall, it is often very desirable to top dress with a quickly available nitrogen.

The fertilizer should always be well mixed with the soil before the seeds are put in. Never allow bean seed to come in contact with the fertilizer, as there is always danger of injury to the seed and a consequent reduction of the stand.

Much has been said and written with reference to trueness to type. This organization and the seed growers seem to agree that something must be done. We all know how trying it is to undertake to pack quality beans when we have variable size and strings to contend with. We can help the seed growers by making careful note of lots that are badly off type, so that they may be able to trace each lot. The source of our seed supply will be discussed. I will just say here that it is foolish to plant seeds that are known to carry anthracnose. As soon as your supply of seed is received, composite samples should be taken. Make germination tests with any simple germinator or in flats of soil. In addition to this, send a sample of each lot to your Agricultural Experiment Station and have them make germination tests and a determination of the possibility of disease. With this information as a guide, we can know definitely how to plant. If the seeds are of high germination, seventy-five pounds per acre will give good yields of good quality.

The seeding should be just deep enough to insure a supply of moisture sufficient for quick germination. This will vary with the season and the type of soil. Usually one inch to one and one-half inches deep is about right.

A practical problem of great importance is to determine the acreage to be planted on a given date with reference to the picking force. To get high quality, the beans must be picked at the right time. Where a large number of small growers are producing the crop, the field man should know the ability of each family to pick his crop on time.

Give frequent shallow cultivation—often enough to keep down grass and weeds. Never cultivate when the plants are wet. Cultivation should stop when the plants begin to bloom. Spraying or dusting should be done on time. A formula that will kill the larva of the bean beetle when it is very young will not kill when the larva is two-thirds grown. The factory should arrange to carry a supply of spray or dusting material, or arrange with a local dealer to carry an adequate supply.

The field man should make frequent inspections of the growing crop. Particularly should he see the crop of the new grower frequently. He should know within a few days just when each crop is ready to pick, and try to see the crop just before picking. The bean crop is one which gives quick returns to the grower and usually better returns than some other can house crops. For that reason, the average contract grower is tempted to try to put in too much acreage, and should be held down to a reasonable acreage.

We can briefly sum up the "practical problems" confronting the bean grower: Careful selection of soil; intelligent study of fertilizer needs; thorough preparation of seed bed; proper attention to the seed supply; careful cultivation; timely dusting or spraying; picking on time and then getting them into the cans as quickly as possible. Attention to all these practical details should insure the grower and the canner a profitable bean crop.

CHAIRMAN SHRIVER: Gentlemen, we have on this subject quite a large field for discussion. If anyone has any questions, I am sure Mr. Watson will be glad to answer them as definitely as he can.

MR. JEWETT (Maine): Mr. Chairman, I should like to ask Mr. Watson if he had any experience in treating the seed with nitrogen?

MR. WATSON: No sir, we have never used any innoculation. The consensus of opinion is that innoculation is not necessary.

MR. JEWETT: Do you recommend the treatment of lime to the soil before planting?

MR. WATSON: I left the question of lime out of my paper intentionally, because conditions vary so much in different sections. However, we all know lime is very desirable for any crop. The micro-flora of the soil is always helped in a neutral soil by its application. I think, without hesitation, we can say lime is desirable wherever the reaction is aided.

MR. TAYLOR: What relation does per pound of seed planted per acre have to yield?

MR. WATSON: About 75 pounds was common practice for a good yield. With thinner stands, we get somewhat larger pods, which are undesirable.

CHAIRMAN SHRIVER: I wonder if there is anyone here who has had any experience in fertilizer tests on beans, or knows anything about that subject? I think it would be quite interesting to hear something on that at this time.

Dr. Sayre, can you tell us anything about that?

DR. SAYRE (New York): We have two different types of experiments with beans. The most striking result obtained was from the methods of applying the fertilizer. As you probably know, and as Mr. Watson has mentioned, if the fertilizer is applied in the drill rows with the seeds, it is very injurious. Many farmers are aware of that and they sow the bean seed with a grain-drill, sowing the fertilizer in the three rows between; that is, if you are using 20, 28 or 35-inch rows, the rows in between where the seed is sown are sown with fertilizer. We tried out that method of sowing the fertilizer between the rows; first, sowing before the seeds were sown, and then sowing the fertilizer with the seed. Our results were exceedingly striking:

Where the seed was sown with the fertilizer, it was very injurious; where separately, very beneficial results were noted; between the rows, not so effective as I had thought.

It was very evident that it paid to apply the fertilizer in a separate operation before seeding the beans, rather than trying to get the fertilizer and seed sown together in one operation.

We got our best results with much the same formula Mr. Watson has mentioned: 4-16-4—4 per cent nitrogen, 16 per cent phosphate and 4 per cent potash. We prepared 300 to 600 pounds and 100 pounds per acre, and it seemed that 300 to 600 pounds was the best amount for the average farmer to use.

MR. DULANY: Mr. Chairman, may I ask if the experience of the canners in different sections would indicate that they usually put as high as 75 pounds of seed to the acre? That is quite an interesting point to me for we have always used 40 to 45 and if we had better go up, it is a very valuable lesson to learn.

CHAIRMAN SHRIVER: Mr. Dulany, I can say that we in the western part of the State (Maryland) use the same amount as you do. I would be very interested myself to know if anyone else is using any more than 40 to 45 pounds in seeding beans or peas.

MR. JEWETT: In our section, we recommend 60 pounds.

MR. TAYLOR: Mr. Chairman, I saw an article (I think it was in The Canning Trade) about some experiments in which they used from 40 to 45 pounds up to 2 bushels, and my recollection is that the yield per acre was much better from around a bushel and a half to two bushels, but I don't recall exactly, nor do I remember just whose experimentation it was.

DR. SAYRE: Dr. Gillis from the University of Illinois is here, and I am sure he could give us some valuable information.

DR. GILLIS: Probably the experiments the gentleman refers to are some I started in New York State in 1922 and 1923 and which I later continued down in Urbana in 1927 and 1928. Results indicated we did get better yields.

I tried three different types of varieties: The Valentine, the Burpee Stringless, and the Stringless Refugee. That was with the idea of getting varieties that varied in type of growth. I found Burpee Stringless could be planted thicker than the Refugee, particularly in dry seasons. However, in Urbane's more fertile soil, the best yields were with 12 pounds to the foot; that is considerably in excess, I think, to 75 pounds per acre—I believe, about two bushels.

DR. WOODBURY: What rate resulted in the highest yield in the Refugee?

DR. GILLIS: Ninety pounds per acre.

MR. DULANY: How wide were the rows?

DR. GILLIS: All three feet apart. I am now continuing the experiment, varying from three feet to six inches between the rows.

DR. WOODBURY: It would be most desirable to get some canner's experience on that as to how heavy a rate of seeding they are using in different parts of the country.

CHAIRMAN SHRIVER: I think it would be very desirable. Is Mr. Hartman here?

MR. HARTMAN: Twenty-eight to 36 pounds. By check-growing them in, we get much better results in Michigan. On the kidney wax type, 45 pounds. Where we are planting over in the heavier section, or central part of the State, the average is 45 to 60 pounds, because large acreages are sown. On Refugee Wax, 28 to 36 pounds, which, I might say, is quite a plenty.

MR. STAR: We have had no recent experiments, but we found the best results were had with an average of about 45 pounds of seed per acre; with more than that, plantings are likely to be small.

DR. GEISE: Our experiments are rather limited at the University of Maryland.

MR. W. F. JUSTICE: Mr. Chairman, we had a meeting in Ohio the latter part of last month and an experiment from the Experimental Station at Wooster on the planting and seeding was cited. I thought it might be of interest to speak of that.

This is all drilled 28 inches apart, and it shows quite a comparison. This gives two beans to the lineal foot, 30 pounds to the acre; three to the lineal foot, 45 pounds to the acre; six, 80 pounds to the acre; nine, 135 pounds to the acre; twelve, 180 pounds to the acre. The schedule was as follows:

Quantity per acre	1922	1923	1927	1928	1929
30 lbs., yield	7305				
45 lbs., yield	8717	1754	4067	7271	5669
90 lbs., yield	9352	2008	5377	7653	6515
135 lbs., yield		2053	5751	7708	6738
180 lbs., yield		1720	5598	8213	6906

It is a question as to how a person should plant.

CHAIRMAN SHRIVER: If I followed those figures closely, up to 80 pounds per acre there was some apparent increase.

MR. JUSTICE: There was not a great difference between the 45 and the 90.

MR. DULANY: How would the gentleman summarize that considering the factor of the cost of the increased amount of seed? I mean, what would give the best net return?

MR. JUSTICE: I would judge about 60 pounds to the acre.

MR. DULANY: What variety?

MR. JUSTICE: Refugee.

MR. COLLINS: Wasn't that a report of Dr. Gillis' work? I believe that was on Dr. Gillis' work at Cornell rather than at Wooster, Ohio.

CHAIRMAN SHRIVER: If there is no further discussion, we will pass on. We all know there are other problems to the bean grower than just the bean beetle and the problems of soil preparations and fertilizing. One of our biggest problems, I think, today, is the problem of bean diseases. There are a number of these, as you all know; some of them carried on the seed, and some of them carried into the ground. Dr. W. J. Zaumeyer of the Bureau of Plant Industry, United States Department of Agriculture, Washington, D. C., is with us this morning and he is going to give us a talk on "Bean Diseases and Seed Production." Dr. Zaumeyer. (Applause.)

Bean Diseases and Seed Production

By W. J. Zaumeyer
United States Department of Agriculture, Washington, D. C.

IT was my privilege last year to discuss with the members of this section the question of bean diseases and methods of their control. Today I plan again to review these diseases briefly in order to bring out the salient points by which these diseases may be recognized, and their occurrence and spread prevented. I shall also attempt to discuss western bean seed production in some detail, a matter which I believe is of vital importance to bean canners.

The important snap or canning bean diseases which occur in the United States are anthracnose, bacterial blight and mosaic.

ANTHRACNOSE

The symptoms of anthracnose can be found on all parts of the plant above ground. On the seed the disease appears as a distinct dark grayish or black blotch or spot, often times having a pinkish gray center, which are the spore masses of the organism. On stems and pods the organism produces a reddish-brown lesion resembling a canker, which later turns black and becomes sunken. The fungus may penetrate the stem in such a manner as to weaken it to the extent that it is easily broken in cultivating or by a strong wind. When the pods are picked it is often difficult to detect young lesions, but such infections may later develop into serious spotting if the pods are allowed to stand

for any length of time before use. The disease on the leaves may be recognized by a discoloration of the veins, particularly on the underside. On the upper surface the lesions appear as angular areas which later crack open, giving a ragged appearance to the foliage.

BACTERIAL BLIGHT

As with anthracnose, the symptoms of bacterial blight may be found on the seeds, stems, leaves, and pods. It is on the leaves that the disease produces the most conspicuous symptoms. The lesions first appear on the under sides as small water-soaked spots which gradually enlarge and later appear as brown scalded-like areas, which in turn cause death of the leaf and subsequent defoliation of the plant.

The most important stem lesion is that known as the stem girdle or joint rot. This symptom appears at the lowest or next to the lowest node, gradually encircling the stem and usually causing the plant to break over at the time of pod formation. Bacterial blight may also infest the pods, making them unfit for canning purposes. The lesion at first appears water-soaked, but later becomes dry and sunken, taking on a brick-red color. In affected pods are often born diseased seeds, which when slightly infected are very difficult to detect. A discoloration at the point of attachment of the seed to the pod through which the organism has entered may result. Such seed, when planted, often produces diseased seedlings. On white or highly colored seeds the symptoms are more conspicuous than on dark-seeded types.

MOSAIC

Possibly less is known about mosaic than any of the bean diseases. Although mosaic does not kill the plant, and with slight infection does not produce conspicuous symptoms, thus being easily overlooked by the growers, it should not be understood that it is unimportant.

The symptoms are only recognized on the leaves, where, as the name indicates, the disease appears as a puckering and mottling consisting of patches of light green and yellow amid the normal coloration. Diseased plants may be dwarfed and spindly and in such cases a normal crop of beans is not produced. Mosaic is often difficult to diagnose properly since the symptoms may vary under different climatic conditions. Unfortunately the disease can not be detected on the seed, the most important means of transmission and for this reason the disease spreads rapidly throughout bean-growing regions.

CONTROL

Disease-free seed appears to be the most satisfactory control measure for anthracnose, bacterial blight and mosaic. Thus far no seed treatment or other control measure has been found to control them satisfactorily. There is evidence to indicate that the anthracnose organism has the ability to live in the soil for more than one year. Therefore certain farm practices, such as crop rotation and the burning of diseased refuse, are recommended. Cultivation should only be done when the vines are dry, to prevent spreading the organism from one plant to another. No canning varieties thus far have proven resistant to the disease.

As with anthracnose, bacterial blight is best controlled by the use of clean seed. Since it is difficult and some times impossible to detect slightly infected seeds, much seed which appears healthy may be diseased. The only assurance, then, of cleanliness of the seed is by seeing the plants in the field. It is a known fact that in certain areas of the West, which will be discussed later, bacterial blight seldom if ever occurs. Considerable variation in susceptibility to blight is found in the important canning varieties of beans. No one shows absolute resistance to this disease, but there are a few which seem to exhibit a high degree of resistance. The Refugee varieties, comprising the Extra Early Refugee, Late Stringless Refugee, 1000-1, and Refugee Wax, show evidence of little infection. Varieties of medium resistance and also of good canning qualities are Giant Stringless Green Pod, Full Measure, Burpee New Kidney Wax, Round Pod, Kidney Wax, and Rogers Improved Kidney Wax.

No method of control has as yet proven satisfactory for bean mosaic. All seed treatments in the past have failed, since it appears that the virus is too intimately associated with the seed itself that all attempts to kill it have destroyed the seed as well. Because of the widespread nature of the disease, as well as the absence of seed symptoms, it is quite probable that absolutely clean seed can not be procured. It should be recommended that it is an unwise policy for growers to plant seed of an unknown source.

SEED SOURCE IN RELATION TO DISEASE FREEDOM

Since enthracnose, basterial blight, and mosaic are seedborne, the question of seed source is of utmost importance. When diseased seed is planted and proper weather conditions prevail for the development of the disease, the affected seedlings may act as centers for much of the secondary spread. If this factor can be eliminated it is very evident that the amount of dissemination will be greatly reduced. It is an established fact that certain sections of the semi-arid West where much of the canning-bean seed is grown produce a crop that is free from one or another of the diseases just described. For the past few years a study of the disease condition of the bean crop in the important growing sections of the West has been made, and an attempt to discuss briefly the observations that were made in territories visited is here presented.

COLORADO

The largest Colorado acreage of canning-bean seed grown by the various companies is found in the vicinity of Greeley and Pueblo, located east of the Rocky Mountains. The estimated acreage for this section in 1929 was slightly lower than that of previous years. All canning varieties are grown in these regions; however, the largest acreage in the past year was doubtless devoted to the Refugee varieties because the season in Colorado is somewhat longer than in the other bean-growing territories. However, this year the region was visited by an early freeze and it was estimated that a 25-30 per cent reduction in yield would result, particularly in the Refugee varieties.

Weather conditions vary slightly from year to year and as a result the bean crop likewise varies with regard to the prevalence of disease, especially bacterial blight. An important fact to be remembered in this connection is that anthracnose, which is sometimes serious in the eastern bean-growing sections, has never been observed by the speaker in this State nor any other State west of Colorado. On experimental trial grounds conducted by the United States Department of Agriculture at Greeley, where anthracnose-infected seed was planted, diseased plants failed to appear. This disease is very sensitive to temperature and humidity, and develops abundantly under cool, wet weather conditions, whereas under hot, dry conditions, it apparently disappears. This fact seems to explain why it is seldom if ever observed in the semi-arid western States. From the standpoint of disease-free seed production this is an exceedingly important fact and it is recommended for canners who desire anthracnose-free seed to procure it from such regions.

As was reported here last year, the crop in 1928 was considerably reduced because of hail and bacterial blight; however, during the past year very little of this disease was observed. The fact that the rainfall in 1929 was below normal accounted for the lack of spread of the bacterial blight organism. The small amount which did occur was found on young plants, the great majority of which died before seed maturation. Because of the prolonged dry weather secondary spread did not occur and, as a result, practically all of the Colorado seed this year will be free of bacterial infection.

Bean mosaic is not as important in Colorado as it is in some of the other western States, and, although the disease appeared to be slightly more widespread in 1929 than it did in 1928, no appreciable loss resulted. Since all of the western seedmen are aware of the increasing importance of this disease and are doing all in their power to help control the malady and produce crops as free from the disease as possible, the canners can be assured of receiving seed as clean as it is possible to grow.

WYOMING

The Wyoming acreage, which is found principally in the Big Horn Basin section, located in the northwestern part of the State, is less than in Colorado, but it appears to be increasing from year to year. Almost all of the canning varieties are grown, with perhaps more emphasis placed upon the wax rather than the green varieties.

Similar to other western States, anthracnose has not been found to occur in this region. It is not a blight-free region, since in certain years losses are sustained because of this disease. In 1928 the blight was found in many plantings, in some cases destroying the entire crop. During the season of 1929 little if any blight was observed and the seed produced was free from infection. The reason for the difference in the condition of the crops in 1928 as compared with 1929 is again due to the variation in climatic conditions of the two years. Mosaic was found to the extent observed in Colorado. Since the Refugee varieties, which comprised a small acreage, are the most susceptible to the disease, the reduction in yield was very small.

MONTANA

The production of canning-bean seed in southern Montana is increasing from year to year. Practically all of the canning varieties are being grown, although the Refugee varieties are not grown extensively because the season is not sufficiently long for the maturation of the crop.

Bacterial blight has been found in this region to cause very little damage except in a few instances where certain fields were entirely destroyed. Anthracnose has not been found. Mosaic occurs on most of the Refugee varieties.

IDAHO

The Twin Falls section, located in the southern part of Idaho, is possibly one of the oldest bean-producing areas in the West. Beans have been grown there for a period of 25 years with good success. The seed acreage of contract or canning beans during the past season was slightly increased over 1928, being about 18,000 acres, comprising about 18 different varieties. The Refugee bean acreage has been decreasing from year to year principally because the season is not sufficiently long to mature a crop.

Besides the freedom of anthracnose, this section likewise produces bean crops free of blight. It is the only region in the inter-mountain States from which bacterial blight has not been reported. In 1928 and 1929 seed heavily infected with bacterial blight was planted in trial grounds and the resulting crop showed no infection. Since anthracnose and blight do not occur in this region the seed companies operating there take advantage of this fact by using in a great measure Idaho-grown seed as stock. This, when planted in areas where blight can occur, produces a crop far less liable to become infected, because of the absence of primary infection.

Mosaic is more serious in Idaho than in any of the western bean-producing sections. It was found to be very widespread both in 1928 and 1929, but because of the fact that the Refugee acreage was very small the past year, the reduction in yield was not serious.

CALIFORNIA

The bush bean acreage in California as compared with that found in the intermountain sections is relatively small. The high price of land and the more profitable competitive crops seem to account for the reduced acreage. Those grown there are found in the regions north of Sacramento and around Salinas.

Anthracnose and bacterial blight were not observed in any of the sections visited; however, mosaic was found to occur, but not as widespread as in southern Idaho. The region which appeared freer of this malady was the section in the vicinity of Thornton, where little or no secondary spread of mosaic was observed.

SUMMARY

Briefly summarizing the relative prevalence of disease in the areas mentioned, it is noted that anthracnose has not been observed in the five western States, Colorado, Wyoming, Montana, Idaho, and California.

Bacterial blight has not been reported from Idaho and California, whereas it is found some years in varying amounts in the States of Colorado, Wyoming, and Montana. It should not be understood, however, that the disease is widespread each year in these localities, notwithstanding the fact that in certain seasons, when the weather conditions are ideal for the spread and development of the disease, bacterial blight has been serious both in Colorado and Wyoming.

Mosaic, which is more widespread than anthracnose and blight, is found in all of the western bean-growing States, Idaho possibly being most seriously infested. This fact is important, however, since the Refugee varieties, which are most susceptibe, are not grown extensively here, but in those sections where the disease is less widespread. Canners growing these varieties need not be particularly disturbed at the present time.

It is very unfortunate that certain observers who visit sections in a year when bacterial blight is extraordinarily destructive, form the impression that this disease is prevalent every year and that seed grown there will always be infected with the disease. From such observations they often condemn these territories for all time. Such impressions are unfair and should be corrected. For example, during the season of 1928 bacterial blight was very serious in many plantings both in Colorado and Wyoming, in many cases destroying entire crops. Weather conditions that year were ideal for the development and spread of the disease. On the other hand, in 1929, climatic conditions were radically different from those in 1928, hot, dry weather prevailing, resulting in little if any blight in either Colorado or Wyoming, and seed originating from these two localities will carry no disease. If this survey had been made only in 1928 the observer might have formed the impression that these regions are unfit for bean seed production because of the prevalence of bacterial blight. It is for this reason that predictions made for a single year may be false, since variation in climatic conditions are often accountable for the condition of the crop.

The large seed companies operating in the West are appreciative of the importance of clean seed and are co-operating in every possible way to reduce the percentage of diseased seed. Since the canners in general are equally interested in the importance of clean seed, it is believed that with their continued co-operation a steady improvement will be made.

CHAIRMAN SHRIVER: Thank you very much, Dr. Zaumeyer.

Are there any questions on the subject of bean diseases and seed production? I am sure Dr. Zaumeyer would be glad to answer them.

I am very sorry to say that Mr. Jay D. Fuller, who was to have given us an address today, is ill and unable to be with us.

Dr. Zaumeyer mentioned the fact that scientists are dry. I hope you won't think this is becoming a W. C. T. U. meeting or anything, but we have on our list another scientist. Mr. Braithwaite of the United States Department of Commerce is going to speak to us on the simplification of containers. Mr. Braithwaite. (Applause.)

SIMPLIFICATION OF CONTAINERS

By DR. BRAITHWAITE

WHILE the problem I am going to present you is a little bit different from what you have heard this morning, which has been on growing and production, I want to speak to you on the simplification of containers.

As your Chairman has indicated, I represent the Division of Simplified Practice of the Bureau of Standards of the Federal Department of Commerce. I am here primarily to present a report of the study of the canning industry made by our Division at the request of the canning industry. However, before we get into that report, I want to give you a brief word regarding the historical background of the setup and organization of our Division of Simplified Practice.

Back in 1921, following very closely the so-called Hoover Committee on Waste, when Mr. Hoover came in as Secretary of Commerce, he set up this Division of Simplified Practice to be of service to the industry; just one of the major methods of attacking waste in the industry. This Division really was set up by him to carry out in a voluntary way some of the work which was carried on by the War Industries Board in a regulatory way.

Before we go further, I want to call your attention to the fact that this is a voluntary program and our aim is to be of service to the industry. The cost of distribution of commodities has in recent years played an increasingly important part in the selection of specific types of containers for use in packing and shipping. Food packing groups appreciate the inherent advantages for their industries in the adoption of a simplified list of sizes, capacities and types of food containers. Some packers of food products have felt that they would lose their identity, and possibly suffer some commercial disadvantage, through a departure from odd types and sizes of packages. This attitude is gradually being changed, however, due to increasing knowledge of the economies of distribution. The producers and distributors of food products are finding that the simplification of dimensions and capacities of food packages is putting competiton on a quality and service basis, where it belongs, which should eliminate a lot of wasteful competition resulting from fractional differences in sizes and net contents.

Since the organization of the Division of Simplified Practice, we have been of service to a number of food packing industries or groups in establishing a simplified list or schedule of sizes, dimensions, types and what-not of packages.

I think with this little background, we will get right into the report of the study made by our Division, which was made at the request of the National Canners Association.

REPORT OF A STUDY OF THE CANNING INDUSTRY MADE BY THE DIVISION OF SIMPLIFIED PRACTICE OF THE DEPARTMENT OF COMMERCE

IN April, 1928, the National Canners Association requested the Division of Simplified Practice of the Department of Commerce to make a survey of the canning industry with a view to ascertaining the diversity existing in sizes of packers' cans. It was felt by that organization that there was a needless waste being created by the use of too wide a range of sizes and that a study of actual operating conditions might bring to light data which would be helpful in deciding which cans should be used.

Accordingly, the Department of Commerce circularized some 2800 canners throughout the country, requesting information on the various sizes of cans which they used in packing their products. About 500 replies were received containing sufficient in-

formation to indicate that there were being used an enormous number of sizes, some differing only by thirty-seconds of an inch. While this information indicated a wasteful condition, it was not sufficient upon which to base any definite recommendation. It was felt that further data should be obtained from the large can companies.

A representative of the Department of Commerce conferred in Chicago with officials of the American and Continental Can Companies and submitted a report of the survey which had been completed. It was felt by these officials that many of the differences shown in the canners' replies were due to inadequate facilities for accurately measuring the cans and that while a diversification certainly existed that it was not quite as bad as the figures which had been collected would indicate.

The report was then redrafted and many of the cans which varied by small fractions of an inch were grouped together under classifications which seemed logical. When this work had been completed, it was found that there were 64 different sizes of cans being used for the packing of fruits and vegetables.

The can companies were then requested to supply figures on the production of these sizes of the cans for the years 1927 and 1928, in order that a fairly accurate idea might be obtained as to the volume of business enjoyed by each individual size. This data when compiled indicated very clearly that certain sizes which enjoyed a very small percentage of the total might easily be eliminated without working hardship on anyone and with considerable benefit to the great majority of concerns in the food industry, for wholesalers, retailers, and chain stores, as well as for canners and manufacturers of cans. Out of the 64 sizes it would seem that 27 would readily supply the requirements of the large bulk of the demand. In reaching this conclusion due consideration was given to the particular use for which each can was intended. In practically every case the cans eliminated enjoyed less than one-tenth of one per cent of the total annual business represented in the canning of fruits and vegetables.

By this method the following list of sizes, to be considered as standard for the country for the packing of fruit and vegetables, was arrived at:

202x214—5 oz. Tomato Paste.
202x308—6 oz. Tomato Paste—Southern 4 oz.—Nickel Milk.
208x211—8 oz. Bean—8 E—Baby Milk.
211x300—Special Sauce (Coast)—Regular Tamale.
211x304—No. 55—8 oz. Sauce.
211x400—No. 1 Standard—Eastern Oyster—Southern 8 oz.—Picnic.
211x408—Special Olive.
211x600—Pint Olive.
300x308x308—No. 1 Tip Asparagus (square).
300x308x604—No. 2½ Asparagus (square).
300x407—16 oz. Bean—Dog Chow.
300x409—20 oz.—Tall Milk.
301x208—8 oz. Pimento.
301x400—No. 1 Tall (Hamaiian)—No. 1 Honolulu Tall.
301x411—No. 1 Tall—No. 1 Coast—1 lb. Salmon.
303x406—303 Can—18 oz. Bean—Medium Soup.
307x204—No. 1 Squat (Hawaiian).
307x302—No. 93—3⅛ inch No. 2.
307x400—No. 95—18 oz. Bean—No. 2 Squat (or short).
307x408—No. 2 Standard (Coast).
307x409—No. 2 Standard (East).
401x205—No. 1 Flat (Coast).
401x206—No. 1 Tuna—No. 1 Flat (California).
401x411—No. 2½ Standard.
404x414—No. 3 Standard.
603x700—No. 10 Standard.
603x812—Full Gallon—No. 12 Pickle.

The Louisville grocery survey, conducted by an entirely separate branch of the Department of Commerce, indicated that in 16 stores of all sizes surveyed in that city between 90 and 95 per cent of the total business done in canned fruit and vegetables was covered by about 5 of the sizes in our standard list. While it might be pointed out by some that Louisville is not representative of all sections of the country, it is true that all types of stores from very small corner groceries to large retail houses were covered and the 5 sizes most popular there might not be those which would answer for the same percentage of demand all over the country, the list of 27 sizes should certainly answer all normal requirements. From the figures obtained from the can companies, it looked as though the 27 sizes retained would supply 95 per cent of the demand.

The result of the use of this standard list of sizes by wholesalers, retailers, and chain stores will materially reduce their inventory and release capital tied up in slow moving stock. It should make for more economical packing due to longer runs, with fewer changes of machinery, less idle equipment, and reduced clerical overhead.

The success of any co-operative movement such as this is entirely dependent on the whole-hearted support of all of the elements of the industry and it is sincerely hoped that the list of sizes proposed in this report will be accepted for use by the canning and affiliated industries and that the economies which seem apparent in the program will be realized. The Division of Simplified Practice offers its services in promulgating this recommendation as a national standard should it meet with the approval of the affected industries.

Mr. Braithwaite made the following interpolations while reading the report:

No. 1, preceding the table on page 2, Mr. Braithwaite said: Now I imagine some of you are wondering what some of these dimensions over in the left column mean. That is just the way the can salesmen use them. In other words, 202x214 means a can of 2 2/16x2 14/16. That gives you an idea of these measurements. You understand these are sizes recommended for the whole country.

MR. BRAITHWAITE: As I said at the outset, I am here simply to present this report to you gentlemen. I don't know what action, if any, you care to take this morning. I imagine about all you can do, unless you want to discuss some of these sizes, is to simply adopt the report. However, I shall be glad to answer any questions.

QUESTION: On page 3 of the report, you show 307x408, and right under that, 307x409. Do they use a smaller can on the Coast?

MR. BRAITHWAITE: Apparently they do; slightly smaller.

I want to say this: Should this be adopted by the industry, the Department of Commerce will print and promulgate this list as representing the best thought and practice of the industry. In other words, we will announce to the world that this is what you want and represents the best method.

A very important factor is the appointment of a standard committee to follow through on the program and make such provisions once a year as may be necessary; for instance, putting a can back in your standard list or taking a can out that has lost its value. That is about the most important step in our whole procedure, the setting up of this Committee to make such changes as will be necessary from time to time to keep the list abreast as the best thought in your industry.

CHAIRMAN SHRIVER: Are there any further questions?

What action, if any, does the Section wish to take on this report of the Division of Simplified Practice? If there is no desired action, we will simply report it as accepted by the Wax and Green Bean Section.

Mr. Culver has very kindly consented to lead a little discussion on the subject of factory operations. Mr. Culver.

MR. CULVER: I am not a factory member of our organization; I am the foreman of it, but I shall be glad to help on this in any way I can.

I should like to ask some questions: How does the factory receive the beans from the fields? How do the firms represented here receive the beans from the fields? How do you pay the foremen, the pickers, and so forth?

CHAIRMAN SHRIVER: Can anyone here answer the question of how they pay the pickers in the field, how the beans are weighed in the factory and in the fields, and whether they buy them on grade?

Mr. Dulany, would you care to give us some information as to how you handle that?

MR. DULANY: Mr. Chairman, that is one of the three or four things I came here to find out. That is one of the most interesting things to me that can be discussed. I want to know a real way for buying string beans on a grade basis, for I don't know any.

SECRETARY GERBER: Formerly we used to buy the Refugees on a graded basis based on count, and that is the practice, I think, of most canners. We are not packing Refugees at present, and have not been for four or five years, but they have a test per pound out of each locality and make an actual count out of that pound, and then the price is scaled—so many count so much. Isn't that what you use, Bill?

MR. HARTMAN: Yes. We use a scale of that kind to test or study the count. I should be glad to mail a copy of our contract to any who may be interested. I might say, further, that it is working our very, very satisfactorily both for ourselves and for the growers. While it is not a perfect scale, it works out very nicely at this time. It gets us the kinds of beans we want and, incidentally, pays the grower a premium for bringing in the small beans.

CHAIRMAN SHRIVER: I believe Mr. George Renau might have some information for us.

MR. GEORGE RENAU: I don't feel I can give any information on that.

MR. CULVER: We adopted a plan of paying the farmer and picker about two years ago, giving each picker a ticket and a number and they keep a duplicate of the ticket. They put

the ticket in the bag and that goes to the factory where it is weighed and the farmer is credited with the weight of the beans and the picker with the picking. Of course, occasionally, somebody puts in two tickets, which doesn't mean a thing, and another will leave the ticket out. We always try to find out who leaves the ticket out.

We have found that system very satisfactory.

MR. DULANY: I should like to know if anybody has had any success with any mechanical device for weighing the beans coming into the factory? We tried the proposition of counting last year and (probably due to the dry year) sometimes we got short beans, short and thick and really of poor quality, causing the number per pound to run up and indicating an excellent quality of bean when, obviously, they were not. When beans ran short and thick and crooked, that count business was off.

I just wondered if anyone here had had any experience with any mechanical grading, whether it had been tried and found successful.

MR. J. M. McLAUGHLIN: I regret that Mr. Fuller is not here for he has used that very successfully. We have used that in New York State, as have practically all the canners there now, and the mechanical is the fair way of grading both for the grower and the packer. We have counted them for the past twenty-five years. We use the Huntley Silver Grader. While I do not own one at present, I am going to put one in this year.

MR. DELANOY (New York): At the meeting of the New York State Canners of Beans recently, it was found there were only two in the state using a grader. We tried it and after the first few days, we questioned whether we were running better grades with the grader than we were with our estimator; later, however, it was proved very definitely that the mechanical grader was the proper way to grade; there was no arguments but that we got more satisfaction ourselves and we had more satisfied growers; everybody was happy.

We had a schedule of how much we paid for beans, and that was satisfactory.

Taking it all in all, I think New York State is very much impressed with the Chisolm-Ryder Grader. I am not, however, advertising any grader.

MR. DULANY: I think blanching is a good idea.

CHAIRMAN SHRIVER: I wonder if anyone can give us any information as to what they have found out in the blanching of beans, as to the proper length of time, and so forth.

Are there any further questions you care to have brought up at this meeting?

MR. WATSON: I should like to make an announcement that might be of interest. After the meeting last year, Mr. Neale Howard told me there was available an agricultural reel, showing the spread, operation and control of the Mexican bean beetle. I have obtained that reel and used it very successfully in interesting the growers in the control of the Mexican bean beetle, and I believe any of you would find it very instructive. It is free and can be obtained from the Department of Agriculture.

CHAIRMAN SHRIVER: Does anyone wish to bring up any further questions on the subject of bean growing or canning? If not, we will ask for the report of the Nominating Committee.

MR. RAWLINS: We, the Nominating Committee, present the names of Dan F. Gerber as Chairman, and Ralph Dulany as Secretary of the Wax and Green Bean Section for the ensuing year.

CHAIRMAN SHRIVER: You have heard the report of the Nominating Committee. Dan Gerber has been nominated for Chairman and Ralph Dulany has been nominated for Secretary of the Wax and Green Bean Section for the coming season. Is there a second to the nomination?

MR. CULVER: I second the nomination.

MR. MICHAELS: Mr. Chairman, unless there are other nominations from the floor, I move the Secretary cast the ballot making it unanimous.

MR. CULVER: I second it.

CHAIRMAN SHRIVER: Is there any discussion? If not, it has been moved and seconded that Mr. Dan Gerber be unanimously elected Chairman and Mr. Ralph Dulany Secretary for the ensuing year. If there is no objection, the election will stand.

The motion was carried.

CHAIRMAN SHRIVER: If there is no further discussion or questions, a motion to adjourn is in order.

MR. CULVER: I so move.

The meeting adjourned at eleven-fifty o'clock.

Fruit Section

Wednesday Morning, January 22, 1930, 9:45 A. M.

Howard M. Lum, Hilton, New York, presiding.

THE meting of the Fruit Section of the National Canners Association convened at 9.45 o'clock, Mr. Howard M. Lum, Hilton, N. Y., presiding.

CHAIRMAN LUM: The first order of business is the reading of the minutes of the last feeting, but in view of the fact that I did not attend that meeting there was not very much interesting to report (laughter), so a motion to dispense with the reading of those worthless minutes is in order.

The next order of business is the appointment of a Nominating Committee to rush through the election by us of Chairman and Secretary for next year. On that Nominating Committee the chairman is Mr. J. O. Holt, of Eugene, Oregon. Mr. Fred Allen, of the Victor Food Corporation, Victor, N. Y., on the Nominating Committee with Mr. Holt. Mr. Rollins, from the W. R. Roach Company, Grand Rapids, Mich, will be on the committee.

We will now hear from Mr. P. H. H. Dunn, Division of Simplified Practice, U. S. Department of Commerce, Washington, D. C.

(Note.—Mr. P. H. H. Dunn. Division of Simplified Practice, U. S. Department of Commerce, Washington, D. C., read the report on Simplification of Containers (cans) as given in the Wax and Green Bean Section.)

MR. P. H. H. DUNN: Yesterday afternoon this recommendation was presented to the Conference Committee, which, as you know, represents the canners, the wholesalers, the retailers, and so forth. The Conference Committee approved in principle this list of sizes, but felt that further data were going to be necessary before it was put on a national basis and before the Association as an association took steps to get their members to conform to this list of sizes.

There was also suggested at the meeting yesterday afternoon that standard nicknames be adopted, nicknames which meant something. It was pointed out that with the present nicknames, for instance, No. 1, Dog Chow, you say No. 1, Dog Chow, fresh peaches. You have to get a standard name that has nothing to do with the product that has been customarily packed, but that has more to do with the dimensions, a standard list of names based on dimensions. That has also been taken up by the Conference Committee.

We hope within two or three years at the most that this thing will be put through, and that the 27 sizes of cans listed will be able to answer for all the requirements of the trade.

Before I run along I should like to ask if there are any questions with regard to procedure used by the Department of Commerce in such projects as this, or any questions on the recommendation itself or how it is arrived at.

CHAIRMAN LUM: I think Mr. Dunn has the thanks of every one of us in the industry who happens to be packing these odd sizes for what he has done on this proposition. Our firm packs one of those weird sizes, and invariably when we get into a proposition such as that we find, after we have run a season, that our cost on those odd sizes is higher than estimated at first. Your department, Mr. Dunn, is certainly doing a fine work along those lines, and I know that as an industry we are very grateful. If we have the government back of us perhaps we can induce the buyers not to ask for so many different sizes of the same capacity can.

Folk, we will skip around a little on this program, for the reason that many of our speakers have other meetings to address this morning. Our next speaker is one who needs no introduction really, Dr. G. S. Schart, of the Western Branch Labo-

ratory, National Canners Association, San Francisco, Cal. In the West Doctor has been making some very interesting and profitable studies on the Springer perforation trouble. Dr. Bohart. (Applause.)

The Effect of Variations in Canning Procedure on the Formation of Hydrogen Springers and Perforations

By G. S. Bohart
Western Branch Laboratory, National Canners Association

STUDIES on the formation of hydrogen springers and perforations in canned fruits in the Western Branch Laboratory of the National Canners Association have been continued during the past year and, as before, attention has been concentrated on the effect of variations in the canning procedure. Owing to the extreme complexity of this problem, progress has necessarily been slow. In these studies we are dealing with a number of fruits, each of which is different chemically and physically, and what is found to apply to one fruit may not apply equally to the others. Each fruit may also vary from season to season and in different localities. We are also dealing with products which are being packed in a number of different sizes of cans under varying canning conditions.

Of the factors within the control of the canner, exhaust and headspace are probably the most significant. The capacity of a can to take up hydrogen is determined by the exhaust and headspace. For example, of two cans having different vacuums and headspaces, the one with the higher initial vacuum and greater headspace will require a larger amount of hydrogen to produce a springer, but the extent to which the life of a can is affected by these factors has not been fully recognized.

Based not only on observations of the rate of springer formation in our experimental packs, but also on practical cannery experience, we are now confident that a practical combination of exhaust and headspace can be outlined which, if followed, will result in considerable savings. Our studies conclusively show that attention to these two factors is just as important as properly made double seams in the case of sterilization. The importance of storing cans at as low a temperature as possible cannot be over-emphasized, but this factor is in the control of the canner only so long as the goods remain in his warehouse; once they are shipped out they may be subjected to almost any storage condition.

A large number of experimental lots covering the effect of such variables are exhaust, headspace, length of cook, different sugars, etc., have been packed during the last three years, either in canning plants in the Pacific Northwest or in our laboratory. These lots, consisting of 48 cans each, have been stored at constant temperatures of 60 degrees, 80 degrees and 100 degrees F. The method used in the examination of these experimental packs is the same as was described last year and involves the determination of rate of loss of can vacuum by the external flip vacuum method and the rate of springer formation. The findings on the individual fruits studied are considered separately in view of the marked difference in their behavior under a given set of conditions. The tables included in the following discussion give typical results of the various factors studied. These represent, however, only a fraction of the data upon which we are basing recommendations.

ROYAL ANNE CHERRIES IN No. 2½ CANS

EXHAUST AND HEADSPACE—

A total of approximately 2500 No. 2½ cans, consisting of 51 lots of 48 cans each, have been packed in three separate canning plants to determine the effect of variations in exhaust and headspace. In the various lots the exhaust range covered time intervals from 0 to 22 minutes and an exhaust box temperature spread from 80 degrees to 210 degrees F. The center of the can temperature ranged from 80 degrees to 204 degrees F. The results shown in Table I represent typical effects and it may be seen that in every instance the service time has been improved by increasing the temperature of the contents of the can at the time of closure and also by increasing the volume of the headspace within the range 4/16-9/16 inches.

TABLE I

	Headspace		
Exhaust	4/16 in.	6/16 in.	8/16 in.
0	100%	83%	62%
7 m. at 140°	100%	63%	29%
7 m. at 170°	96%	19%	10%
7 m. at 205°	.....	9%	6%

LENGTH OF COOK—

The per cent failures shown in Table II is based on lots of 48 cans each. Lots packed in Plants 1 and 2 have been stored at 100 degrees F. and those in No. 3 at 80 degrees F. No springers have as yet developed in the lots packed in Plant No. 3 and, therefore, the results are given in terms of vacuum loss indicating the relative progress of hydrogen accumulation. It may be seen that within the range of 5½ to 36 minutes the service time increased with the extension of process time.

TABLE II

Length of Cook	Plant No.		
Rotating	1	2	3
15 minutes	19%	.....	.....
30 minutes	12%	.....	.....
11¼ minutes	.....	60%	.....
22½ minutes	.....	42%	.....
			Vacuum Loss
5½ minutes	.....	.....	3.5 in.
18 minutes	.....	.....	2.7 in.
36 minutes	.....	.....	1.9 in.

STORAGE TEMPERATURE—

The effect of storage temperature on failures in canned fruits has been studied quite extensively by Dr. E. F. Kohman and Norris H. Sanborn of our Washington laboratory and their results were reported in N. C. A. Bulletin 23-L. In order to determine the relative per cent of losses in No. 2½ cans where both the storage temperature and the size of headspace were varid, lots shown in Table III were prepared. Although the results are somewhat erratic, the general tendency toward greater failures at higher storage temperatures is evident in all three of the headspace series.

G. S. BOHART
Western Branch N. C. A. Laboratories.

TABLE III

Storage	Headspace		
Temperature	4/16 in.	6/16 in.	9/16 in.
100° F.	26%	17%	2%
80° F.	29%	10%	2%
60° F.	12%	0	0

RECOMMENDATION FOR No. 2½ CANS—

Based upon our findings, we would recommend that No. 2½ cans should be exhausted sufficiently high to produce a vacuum of 15 inches and the length of cook should be the maximum consistent with quality. The headspace, measured from the top of the finished double seam, should not be less than 5/16 nor more than 7/16 inches. The cans should, of course, be well double-seamed and promptly and thoroughly cooled after processing. Since the rate of loss of vacuum increases as the storage temperature is increased, the cooler the temperature at which the product is stored, the better the service value.

Experimental packs put up during the last season according to the above recommendation have shown no failures during a six months' storage at 80 degrees F., in fact, there has been only a slight loss in the vacuum as shown by the following data from three representative lots during this period:

Exhaust Time	Ave. Temp.	Cook 212° Temp. Rotary	Vacuum at 70°	Headspace in 64ths in.	Syrup Cut-out	Vac. loss in in., 6 mos. at 80° F.
5'5"	208°	170° 18 min.	14.9	25	21.7	1.7
9'0"	195°	172° 18 min.	15.9	29	21.6	2.0
30'0"	180°	170° 18 min.	14.3	28	22.1	2.0

CHOICE LOGANBERRIES IN No. 2 CHARCOAL RE-ENAMELED CANS

EXHAUST AND HEADSPACE—

In Table IV it will be noted that in general, as with Royal Anne cherries, improved service time is accomplished by increasing the headspace. Storage temperature effect in relation to failures, however, is far more marked and important in No. 2 loganberries than in No. 2½ Royal Anne cherries.

TABLE IV

Storage Temperature	Headspace 4/16 in.	6/16 in.	9/16 in.
100°	56%	60%	33%
80°	31%	15%	6%
60°	0	0	0

LENGTH OF COOK—

As in Royal Anne cherries the effect of prolonging the processing time of loganberries increases the service value, as shown in Table V. The lots were exhausted 5 minutes at 205 degrees and the cans stored at 80 degrees F.

TABLE V

Length of Cook Rotating	Storage Temp. 80° F.
4¾ minutes	21%
8 minutes	15%

CHOICE STRAWBERRIES IN No. 2 CHARCOAL RE-ENAMELED CANS

EXHAUST AND HEADSPACE—

Both exhaust and headspace have an important bearing on total losses (springers and perforations) which occur in this product, as borne out by the results shown in Table VI. Of the lots exhausted as shown in this table, the losses from perforations were distinctly lowest in the highest exhaust. Increasing the headspace did not materially change the losses due to perforation.

TABLE VI

Exhaust	Headspace 5/16 in.	8/16 in.	10/16 in.
0	98%	94%	83%
2 m. at 206°	91%	79%	73%
7½ m. at 206°	72%	73%	71%
13½ m. at 206°	67%	53%	44%

LENGTH OF COOK—

Results of different process times for strawberries, as shown in Table VII, correspond to those obtained in a similar study of Royal Anne cherries and loganberries. The two lots shown in the table were exhausted 7½ minutes at 206 degrees and stored at 100 degrees F. It will be seen that service time was slightly greater in the lot cooked 12 minutes.

TABLE VII

Length of Cook Rotating	Exhaust 7½ min. at 206°
6 minutes	71%
12 minutes	59%

GRAPEFRUIT

During the last canning season ten experimental lots were packed, in a Florida cannery, in which the exhaust and headspace were varied. An equal number of cans from each lot have been stored at 60 degrees and 100 degrees F. for six months and it is apparent that within the ranges studied increasing the exhaust and increasing the headspace result in prolonging the life of the can. The temperature of storage has been found to exert a striking effect of springer formation.

The per cent losses shown in Table VIII are typical of the effects observed on 48 can lots stored at 60 degrees and 100 degrees F.

TABLE VIII

Exhaust Time	Temp.	Headspace in 64ths in.	Per cent springers in six months* 60° F.	100° F.
16½ m.	180°	25	8.3	93.6
16½ m.	180°	31	0.0	97.9
16½ m.	190°	26	2.1	91.7
33 m.	190°	26	2.1	68.1

* The lots were packed the latter part of March, 1929, but were not received at this laboratory until June 20, at which time an equal number of cans were stored at 60 degrees and 100 degrees F. The results given represent losses during nine months' storage, the last six months of which the cans were stored at constant temperatures under our observation.

I think it is mighty interesting. I wish we had known all this ten years ago. Are there any questions while Dr. Bohart is here which you would like to ask him.

MR. McHUGHIE: I assume he is referring to Royal Anne cherries that have not been pitted.

DR. BOHART: I should have mentioned that. The whole Royal Anne cherry constitutes the great mass of pack in the Northwest, and therefore in addressing a Northwest group it is always understood, unless otherwise stated, that they are the whole fruit, although a few cherries are packed pitted. Obviously, if cherries are pitted it is not necessary to attempt to control the head space, because it will always be as large as advisable. In fact, I imagine it is advisable to fill them as full as possible. You could scarcely overfill a pitted Royal Anne cherry if you use a high exhaust, but the story with the whole fruit is quite different.

MR. McHUGHIE: There would not be so much hyperacidity as if the pits were out.

DR. BOHART: We do not have enough of that work to be sure. Our results have been rather erratic. One year it works one way and the next year the other. The general consensus of opinion among the canners in the Northwest has been that they have had less trouble with the pitted fruit than with the whole fruit, but even in commercial packs that is not always the case. Sometimes they have more trouble wth the pitted fruit than with the whole. Of course, there are lots of variables there. It is rather difficult to compare the two, because of the fact that it is difficult to get comparable head space.

MR. McHUGHIE: How about No. 10 packed with a good vacuum and batted around until the sides have been paneled; have you lost the effect of your vacuum?

DR. BOHART: I believe you have to some extent after a can is paneled lost the advantage of the vacuum and the head space. However, the container has a certain amount of elasticity, and in a No. 10 can the ratio between the area exposed to the fruit and the volume of the head space with a given depth of head space is in favor of the No. 10 can. In other words, there is a larger head space volume in the No. 10 can than in a No. 2, for instance, in proportion to the area exposed to the fruit. I have assumed, although I am not sure it is true, that the rate at which hydrogen is produced probably depends upon the area of metal exposed to the fruit. For that reason, perhaps, not as much trouble has been experienced with No. 10 cans as with the smaller sizes. There may be other reasons, too, but I believe that is one of the contributing reasons.

MR. McHUBHIE: As the product begins to generate hydrogen in the paneled can does it push out the sides first or the ends first?

DR. BOHART: So far we have not made any study of No. 10 cans. However, this is only a guess. I believe it would begin to push out the panels first, but, of course, obviously it could never return the can to its perfectly circular form. It probably would very likely begin to push out the panels first, and after the can had returned to its approximate circular form the ends would bulge. If the vacuum does not work the ends would bulge.

MR. H. W. POWELL (Canadian Canners Association): I should like to ask what vacuum for Royal Anne cherries and what temperature of heat Dr. Bohart recommends. I should also like to ask why Dr. Bohart has stressed talking about vacuum in Royal Anne cherries.

DR. BOHART: Royal Anne cherries are probably the fruit in which they are most interested in the Northwest, and probably we have not yet done as much work with strawberries as I have wished to do. We have intended to continue that work this coming year and concentrate on strawberries more extensively.

In going over the records of some of the larger packers in the Northwest I observed that they are obtaining a vacuum of around 12 and 13, and some of them as high or higher than 15 inches, and therefore I would say that I believe certainly with the fruit packed there you could exhause so as to obtain a vacuum of around 16 inches. I am convinced from my results that the higher the exhaust the better.

As for closing temperature, I do not recall the exact figure, but I know where we had an average temperature of 170 degrees in No. 2½ Royal Anne cherries we obtained a vacuum of 17 inches, that is a vacuum of 70 degrees. With a No. 2 can of strawberries I could not say just what the average temperature should be.

It makes a big difference whether you judge the temperature by placing the thermometer in the center of a can or whether you actually get average temperature. In other words, particularly with a short exhaust, the syrup is much hotter than the

center of a piece of fruit. I hope to have more information to answer the questions you have suggested in another year.

MR. POWELL: In connection with strawberries, where the fruit has a tendency to rise in the can, is it not difficult to get that high vacuum and seal the can without crushing the berries?

DR. BOHART: Of course, the expansion of the fruit in a can tends to result in a higher vacuum, because the gas which causes the inflation after cooling decreases in volume considerably, and that would tend to produce a vacuum. As I mentioned a little while ago, we have not done as much work on strawberries as I wish we had, and the work we did do was at the beginning of our experimental work on fruits, so I cannot give you exact figures. I am very sorry.

MR. DAVIDSON (Newburgh, Oregon): I see on this tabulation on Table V it says "re-enameled cans," but it does not say anything about the cherry situation. Were these cherries in plain cans?

DR. BOHART: Table V is under the heading of "loganberries." Those were in re-enameled cans. The heading at the top of the column on the right refers to both Tables IV and V. The Royal Anne cherries were packed in plain cans in every case. We have done no work on the charcoal can for Royal Anne cherries as yet.

MR. DAVIDSON: The Doctor spoke of the cutting demonstration at the Northwest Canners Association. I happened to be present at that demonstration myself? In looking over a number of the charts on black cherries a great number of those cherries were in enameled cans and plain cans. In observing the vacuum record I noticed that in the plain cans the vacuum was almost uniformly very much higher than in the enameled cans.

DR. BOHART: I confess I did not notice that. I was particularly interested to notice how many re-enameled cans of cherreies were shown, because a few years ago results would indicate that it would be difficult to find that many cans of black cherries to show, because they perforated so badly. Apparently some progress is being made in handling that fruit. We have not concentrated much of our effort on black cherries, because we felt that some of the other products were probably more important.

DR. J. R. ESTY (Western Branch Research Laboratory, National Canners Association): I am quite sure there are other questions which the fruit canners would like to ask Dr. Bohart, and provision has been made tomorrow afternoon in the informal conference on canning problems where questions of Springer perforation in canned fruits are to be discussed by Dr. Kohman. I am sure it will be quite helpful to you if you will attend that.

CHAIRMAN LUM: Our next speaker is Mr. E. A. Meyer, Vice-President of the C. H. Musselman Company, Biglerville, Pa., very, very large packers of fine apples, vinegar and apple products. The subject of Mr. Meyer's address is "Treating the Buyer Fairly." Mr. Meyer.

MR. E. A. MEYER (C. R. Musselman Company, Biglerville, Pa.): Mr. Chairman, Fellow Canners and Attendants: Before we take up this little paper that I have for discussion I feel that a few explanations are in order. The Chairman has practically explained one of them: that all my experience in the canned food industry has been with No. 10 apples and a little bit of apple sauce, so all my conclusions and ideas are going to be given with that background. Some things that I may say may not apply at all to canned vegetables, nor perhaps to some other canned fruits. I am lopsided. I am going to talk quite a bit in the line of canned apples and apple sauce.

For the last few weeks I have been wondering why I was put on this program. The more I have thought about it the more confused I have become. About the only and main reason I can think of that I have been put on here is that I am not politically controlled, and so I am going to talk to you frankly, or, in other words, I am going to speak my piece.

TREATING THE BUYER FAIRLY

By E. A. MEYER
Biglerville, Pa.

BEFORE we take up the subject for discussion, I feel that a few explanations are in order. All of my experience in the canned foods industry has been in the field of canning apples and apple sauce, mostly No. 10 apples. My statements and conclusions should be interpreted with this background.

For several weeks I have been trying to figure out why I am on this program, and the more I think about this the more confused I become. The only advantage I have is that I am not politically controlled and can talk to you frankly. This is my first appearance, and perhaps my last, so I am going to "speak my piece."

In my judgment the one all-important word in all sales programs is confidence. This is especially true in canned foods, which must be purchased without actually seeing them. The only information available to the housewife is what is printed on the label.

If a wholesale buyer has confidence in a packer, that his quality and price will be right, the writing of the order is a very simple matter. If a housewife has confidence in certain brands of fruits and vegetables, all that is necessary for the retail grocer to do is to carry them in stock. We build confidence by packing good merchandise, intelligently labeled for successive seasons. We destroy confidence by giving the buyer something they do not want or by misrepresentation, or in other words, if we use the buyer fairly we create confidence. If we use him unfairly we destroy confidence.

For convenience, we will divide the address into three subdivisions. The first is the naming of future prices.

C. E. HUME, President
National Canners Association

I have come to this conclusion: I hear so much about unfairness in pro-rating contracts that I am going to conclude that at some time or other some canner or canners have been unfair in this respect. I am not sure what I would do if I were in a predicament of this kind; that to make full delivery on contracts booked at early prices would wreck my firm financially, or to pro-rate contracts and sell a portion at a higher market and preserve the firm, corporation or institution I would be working for.

Fortunately I have never faced such a situation, and I hope I never will, but no doubt many canners have in times past, and I again state that I do not know what I would do in a situation of this kind; therefore, I am vitally interested in removing any cause or causes to avoid such circumstances.

I am not going to take the time to enumerate all the evils of early future prices. You canners are fully acquainted with them. It is only necessary for me to say that the rate of mortality in the canning industry is very high, and in my way of thinking the early naming of future prices is the major cause for failures in the canning industry.

It is my experience that buyers are not so much interested in knowing if my price on solid pack apples is $4.00 per dozen or $4.50 as they are in knowing if the price I am giving them is in line with crop and business conditions and with competitive apples offered to them. As canners it is our duty to give our buyers prices that represent the crop and business conditions, and in order to do this we must wait to name prices until the crop is fairly well matured and can be definitely estimated.

If we expect the bankers of this country to think more highly of canners' paper it will be necessary for us to take gambling out of the canning industry. If you must gamble, go to the horse races or Wall Street, but keep it out of your canning business.

The last few years have brought about many changes in distribution. Some of these changes have worked real hardships on canners and distributors. To be a successful canner today

you must not only be a canner, but a warehouseman and a financier. Instead of the wholesale grocers and distributors buying a large quantity of any particular commodity to take care of their requirements, for an entire season, they purchase in limited quantities for short periods. This placed a warehouse and financial burden on the canners, and it was necessary for most of us to make some adjustments, but through it all I am satisfied that the canning industry has been placed on a more stable basis. It has distributed stocks, it has reduced the danger of over-packing, and last, but not least, it has removed the cry and demand for early future prices.

If you forget everything I say in this address, remember this one statment: If future prices continue to be named early, it will be because we canners want to continue to gamble, and not because the buyers demand prices before we can intelligently give them.

The second part of this paper might be entitled, "More information, please." I do not know how our present labeling system evolved, but I am sure of this, that while it was not done intentionally, I do not see how a more deceptive system could be worked out by a gang of crooks who deliberately wanted to deceive the public.

To begin with, in canned apples there are no standards. One packer's standard quality is better than another man's fancy. The "net contents" imprinted on the label "usually signified nothing." When I started to sell apples ten years ago there were drained weights ranging from four pounds to six and one quarter pounds, but all of the labels read "contents 5 lbs. 14 ounces." I remember on one occasion I tried to impress upon a buyer the fact that our cans contained four and one-half pounds of fruit. He came back and said his New York State apples contained 5 lbs. 14 ozs.

A few years later I had a car rejected and requested arbitration. We had sold the apples as our fancy quality. The buyer contended they were standards. When the arbitration committee requested specifications as to what a standard or fancy apple should be, I had none and they had none, so they used their best judgment. About five years ago we put out specification sheets on which we printed the actual drained weight contained in each method of packing. Some of our brokers and buyers criticised us severely for this; they contended that we were giving information to the public which would be disturbing. This was not the case, and now they are all complimenting us on the program.

Our application sheet can be intelligently read, but our labels are still deceiving. Here are three labels: This one we use on quartered apples: The cans contain 4½ pounds of fruit and 1½ pounds of water (contents 6 pounds). This one we use for sliced: The cans contain 5 pounds of fruit, one pound of water (contents 6 pounds). This label we use on our solid pack, and the cans contain 6¼ pounds of fruit and about ¼ pound water (contents 6½ pounds). I will tell one of our buyers that our solid pack contains about two pounds more per can than our quartered; then he will look at the labels and say: "You show this one, contents 6 pounds, this one 6½ pounds, so there should be only ½ pound more fruit per can."

I am primarily concerned with the labeling of solid pack because and perhaps the New York State canners will not agree with me, I believe that the solid pack will be the only apple of any consequence within the next few years. The water pack seems to be passing out very fast.

I am heartily in favor of putting on the label the actual contents of drained fruits. If all of the apple canners would do this we would be taking a great step to enlighten the buyer and create more confidence.

The next thing I would like to see the apple canners do is to agree upon uniform weights for all the different grades of apples. For quartered and sliced water pack this is quite uniform and well as established at 4½ pounds for quartered and 5 pounds for sliced. In solid pack we have weights ranging from 6 pounds to 6¾ pounds in quarter-pound differentials, or a total of four weights.

In talking this over with our competitors I find that most canners are only interested in being on equal basis with their competitors. Our group of canners in Pennsylvania, Virginia and West Virginia had four weights for solid pack in 1928. In 1929 we had only two, and I hope the day is not far distant when all of us will be packing one weight of solid packe apples. Speaking for the C. H. Musselman Company, I believe that we would be willing to increase our weight or decrease it one-quarter of a pound per can in order to secure uniformity.

I want to see the day, and I hope it is not very far distant, when I can go out and sell canned apples on quality, service and responsibility, and not always bring up and argue the question of drained weights and how that factor affects the quality of an apple. We are making a lot of progress in this direction; you can see earmarks of it all along the way.

The Hawaiian Pineapple Company mark their cans with a 1-2-3 that cannot be erased or changed. The bill in Congress, sponsored by the canners to label sub-standards as such, is another step in the right direction.

I am satisfied that if we apple canners do not get our house in order the Department of Agriculture will shortly tell us how to label our cans. That would be an insult. Let's beat them to it.

CHAIRMAN LUM: We all thank you, Mr. Meyer, for a very interesting and constructive paper.

The next speaker who will address us on "Preserving Fruits and Vegetables by Freezing" is Mr. H. C. Diehl, of the Wenatchee office, U. S. Department of Agriculture, Wenatchee, Wash. He has made some very interesting experiments and we welcome him with us. Mr. Diehl.

Preserving Fruits and Vegetables by Freezing

By H. C. Diehl

United States Department of Agriculture, Wenatchee, Wash.

THE frozen pack investigations conducted during 1929 in the Pacific Northwest by the U. S. Department of Agriculture, have dealt almost exclusively with questions arising from the use of small containers in this method of preserving fruits and vegetables.

Beginning in 1924, experiments were carried on for several years which had for their primary objective the understanding and possible solution of some of the problems involved in packing small fruits for freezing in containers, such as the fifty-gallon barrel, which has been, and still is, the standard package for the major portion of the frozen pack tonnage of the Northwest.

These experiments covered four important phases in particular, namely:

(1) The rates of cooling and freezing of berries, when packed with or without cane suger, and when exposed to various low temperatures; (2) the effect of different sugar concentrations upon the water content and texture of the fruit; (3) the effect of different methods of handling of large containers upon the freezing of the fruit mass and upon the distribution of sugar through it, and (4) the development of yeasts and molds and of fermentation in berries, packed with and without sugar and exposed to different temperatures.

The results of these experiments were reported briefly at the 1929 meeting of the National Preservers Association. They are mentioned in this introduction because the investigations of the past season with fruits and vegetables, frozen in small containers, mostly of the pound size, were planned so as to utilize some of the basic facts developed in the earlier studies.

In 1926 some relatively unimportant preliminary experiments suggested to us that the packing and freezing of berries in small containers was quite feasible, and that from this fact there might possibly develop an important new outlet for fruits, to be delivered to the consumer in as nearly a fresh condition as possible.

The rapid commercial growth of this type of frozen pack business, which came as a logical sequence to modern methods of marketing other foods, has paralleled the development and widespread use of small unit refrigerating equipment. As a result the idea of refrigerated foods, rather than heat-processed, has been popularly emphasized in the packing industry to the extent that its future has often become the subject of enthusiastic speculation and surprisingly optimistic predictions.

A conservative estimation of the whole matter, insofar as the technical aspects are concerned, will probably reveal that this method of preservation in small containers is a very useful and promising, though not unlimited, means for the distribution of certain fruits.

The purpose of this discussion is threefold. (1) To describe some of the important packing and handling problems, which have been studied; (2) to present those solutions which have been observed and which appear to be reasonably well founded in fact, even though studied for only one season, and (3) thereby to enable you to judge for yourself the present status of frozen pack, insofar as the technical packing and handling aspects are concerned.

Our frozen pack experiments in 1929 were planned to determine primarily the behavior of different kinds and varieties of fruits and vegetables when packed at point of origin with different sweetening agents or condiments, and when frozen in paper, tin or glass containers at different freezing temperatures,

in some cases after being vacuumized with different degrees of vacuum; and, secondarily, to study the preservative and refrigerating value of carbon dioxide snow and ice, the rates of cooling of fruit in small containers assembled in various cartons and boxes, and the relation of volume shrinkage in fruit to sugar concentration, temperature and period of exposure.

The progress report, based upon a study of about 2,000 experimental lots of fruits and vegetables, is presented with the full understanding that when horticultural products are being dealt with varietal as well as seasonal variations must be considered, and that the observations of one year cannot be regarded as final conclusions, even though they appear to be fully established in fact.

In the course of our frozen fruit work the primary requisites of a satisfactory pack, in small containers, have seemed to be the following: (1) fully matured, firm, clean, well-graded raw material; (2) a fruit mass covered with sirup or sweetened juice and with an attractive color, free from fading or surface discoloration; (3) quick cooling and adequate freezing; (4) agreeable texture, flavor and aroma upon thawing; (5) absence of surface mold, fermentation or decomposition; (6) containers so filled that the package is satisfactorily full when thawed, but one which has not been bulged or distorted, and (7) an attractive tightly sealed package, easily handled in packing and made of material which reduces or prevents oxygen passage to the interior and will not unduly retard cooling.

These factors will now be discussed in greater detail with some reference to the behavior of specific fruits.

At the very beginning, however, it is worth while to pronounce the theme, as it were, of the discussion by the statement that the success of frozen pack in small containers is predicated wholly upon its being a high quality product. There is no need to elaborate this thesis, for nothing less will do. It is possible only to discuss the technical helps for achieving this high-grade pack and to add to them emphasis on packing plant sanitation and conscientious grading.

Maturity of the fruit plays a premier role in this matter. There is no doubt that increasing emphasis is generally being placed in the Northwest upon properly matured fruit as raw material for frozen pack in barrels. If it is true for frozen fruit in large containers, then it should be doubly true for the product in the small container, because of the dessert purposes for which the latter is used and the close scrutiny and critical testing to which the consumer usually subjects it.

It seems that full maturity in fruits is more important in frozen pack than in canned products, because the heat-processing may cause changes in tissue constituents and texture which may mask, more or less, the original immaturity of the raw material. This means, then, specifically that white-tip strawberries, raspberries which cling to the stem, poorly filled sour blackberries and loganberries, poorly colored astringent cherries and green apricots and peaches and other fruits in similar stages of immaturity should be as rigidly excluded form the pack as if they were decomposed.

The importance of full maturity in frozen pack is not merely a matter of obtaining desirable flavor. Surface discoloration, due to oxidation, has always been a matter of primary concern to the frozen packer.

Due to the relatively low ratio of exposed surface to total volume of fruit in barrels, for instance, the discolored portion can be removed with no significant loss of material and no impairment of the pack quality. In pound or two pound containers, however, this ratio is very much greater, and there may be a noticeable loss of material as well as a deterioration in dessert quality in the whole fruit mass as a result of oxidation changes.

We have long believed, but have not been able to demonstrate specifically, that in fruit which is discolored by oxidation, or which is cooled too slowly, there may be complex chemical changes taking place, quite independent of fermentation or real decomposition, which may materially affect the dessert quality of the fruit mass.

There is some evidence in our experiments linking relative immaturity in some fruits with greater susceptibility to discoloration.

With sour cherries, for instance, variation in individual fruit maturity has seemed to play an important role in determining whether cherries retained their attractive red color or whether they became discolored. For blackberries the maturity factor appears to be of paramount importance, both for satisfactory appearance and desirable flavor. Immature blackberries invariably take on a reddish color after freezing, and have a disagreeable bitter astringent after-taste. Unless this condition can be remedied by careful grading for maturity, the blackberry is obviously excluded from consideration as a frozen pack possibility for small containers.

It is true that modifications in packing procedure, which will be discussed presently, may often reduce this oxidation susceptibility, but this fact does not minimize the importance of maturity.

With such fruits as apricots and peaches, which were not very satisfactorily packed in small containers in our experiments, due to surface discoloration, it may be that the selection of only the fully matured, best flavored fruit for packing will materially reduce discoloration and will obviously improve the dessert quality of the product.

The discoloration of fruits takes place as a result of the presence and interaction of specific essential members of an oxidation system. These are: (1) an organic catalyzing agent; (2) atmospheric oxygen; (3) a catalyzer which fixes the oxygen in the form of an organic peroxide, which in turn oxidizes another essential member; (4) the pigment carrier, and so produces the brown discoloration.

F. A. HARDING, Vice-President
National Canners Association

These members are not always all present in plant tissue, and so some fruits do not discolor, even when their tissue is freely exposed to the air. However, in most fruit tissue the constituent members are present, but are separated from each other, and so are able to mingle only when injury or some physicochemical change, such as freezing, occurs and brings about physiological changes in the tissue.

If the mingling of these members of the oxidation system is interfered with or destroyed, air discoloration can obviously be minimized or prevented. The destructon of the catalyzing agent by heat does not now seem feasible with frozen pack, but the exclusion of atmospheric oxygen offers some possibilities.

In the past surface discoloration of the fruit packed in barrels has been reduced by inversion of the containers, so that the surface fruit was coated with the syrup, formed eventually through water extraction from the fruit. This procedure would not be practical or effective with small containers.

The experiments of the past season have shown that there are two means of excluding air from the surface of frozen pack fruit in small containers. Both of these are predicated upon the use of perfectly tight containers, made of materials which retard or prevent air leakage. They are (1) the use of sirups of a 40° Brix reading or higher to cover the surface, and (2) the removal of air from the container by vacuumization.

The effectiveness of these methods will, of course, vary with the fruit, and they are at least satisfactory with such fruits as apricots, peaches and sweet cherries, which discolor very readily. Naturally, both sirups and vacuumization can be used together sometimes very effectively. However, with fruits, such as the various berries, their effect is not necessharily additive when they are both employed. There is evidence that when a sufficiently concentrated sirup covers fully matured berries as soon as they are packed their color may be retained satisfactorily in small containers.

Several series of tests were made with berries and cherries, in which the fruit was covered with sirup and the containers were

subjected to different degrees of vacuum of from 5 to 25 inches before freezing. Upon thawing these lots were compared with fruit in unvacuumized containers. No significant additive effect resulting from increased vacuum was observed. Probably, if sugar is used as a sweetening agent instead of sirup, the presence and the degree of vacuum is much more important because of the frequent absence in this case of the essential sirup coating of the surface fruit in order to exclude air.

The use of water or fruit juice for covering the fruit mass as a preventative of discoloration did not give satisfactory results, because generally marked fading of the fruit color occurred, even when discoloration, due to oxidation, was absent. However, fruit juices, made so that oxidation of the liquid during preparation is prevented, are a desirable but somewhat costiy substitute for water in the preparation of sirups.

Sirup seems to be particularly effective in retarding fruit discoloration after the small containers are opened. This is of utmost importance, because whatever effect vacuumization may have, while the container is unopened, that factor is gradually lost when the consumer opens the package, and may be quickly dissipated in the case of fruits, which discolor readily.

In passing emphasis should be placed upon the vital importance which properly educated consumer utilization has for whatever measure of success the frozen pack may enjoy in the future. If I may use a figure of speech, it seems to me that at the present time, due to the nature of frozen pack in small containers and the requirements for its satisfactory utilization, that the consumer may not only be the judge, but the whole court, except the defendant, in determining whether the frozen product is a success or a failure.

While I am making no excuse for poor preparation and handling practices, it is true that no degre of care and thoroughness in these phases will prevent a negative judgment, if the consumer does not know how to properly utilize the product. It may just as well be frankly admitted that the industry and the investigators are at present not yet prepared to advise the consumer on all phases of best utilization.

There was some evidence in our experiments when strawberries, frozen at 10° and 3°, 10° and 20° F. were compared for color, that the fruit frozen at the lowest temperatures retained its color most satisfactorily, particularly when sugar was used instead of sirup. This may be due, however, to the fact that surface discoloration goes on more rapidly at higher temperatures, and hence quick reduction of fruit temperatures may lessen the degree of oxidation changes.

Although raspberries and loganberries are packed in barrels without added sweetening, it has become almost an axiom of frozen pack procedure not to pack strawberries in this way.

For the Marshall and Ettersburg 121 strawberry varieties, Cuthbert raspberries, Evergreen blackberries and loganberries packed in our experiments, a 5-1 sugar pack or a 50° sirup (the small containers generally requiring from 4 to 6 fluid ounces) appear to be the minimum sugar concentrations necessary for good color retention. Normal color was best retained in 70° sirup, invert sirup or in honey, with a well-mixed 3-1 sugar pack next in rank.

In all these berries there is more or less progressive darkening and discoloration after the fruit is exposed to the air, which fact emphasizes the desirability of retaining frozen pack fruit in a frozen condition and in an unopened container until utilized by the consumer.

It is probably less desirable to hold frozen pack at very low temperatures just before utilization, because this will necessitate a longer thawing period at customary room temperatures before the consumer can use the product, and will augment, of course, the chances for discoloration and deterioration.

The color of the sirup or liquid in which the fruit rests reflects very quickly fading or discoloration in the fruit mass. Therefore, those factors which make for good color retention in the fruit also preserve color attractiveness in the sirup.

It is particularly essential that fruits such as blackberries and black raspberries be coated with sirup in order to give them a very desirable glossiness.

It was difficult to prevent discoloration in apricots, peaches and cherries, and both high degree Brix sirup and absolute exclusion of air from the container, as well as fully matured fruit, seemed to be necessary to minimize surface oxidation during storage.

It is also necessary to utilize these fruits as soon as the container is opened after thawing because of the rapidly progressive darkening which occurs wherever the fruit is not sufficiently coated with syrup.

In an effort to further minimize some of this discoloration in these fruits, experiments were conducted with Elberta peaches and Tilton apricots in which the fruit was cut and left exposed to the air, or was cut and dropped immediately into water or 1 per cent citric acid solution or 1 per cent salt solution. Color was best retained in the fruit dropped into water or salt solution, and in that which was subsequently vacuumized and which was packed with sirup of suitable concentration. These advantages were quickly lost, however, if the fruit was exposed to the air at ordinary room temperatures during thawing. The packing of unblanched and unpeeled peaches cannot be recommended, but for apricots peeling was not essential.

Bartlett pears discolored about as readily as the peaches and apricots. Gooseberries and melons, however, retained their natural color very well, particularly if packed with sirup.

Some experiments were made with Elberta peaches in which the air in the containers was replaced with carbon dioxide at the time of packing. The purpose of this was to remove the oxygen necessary for surface discoloration and also to utilize the preservative character of carbon dioxide against molds and bacteria. The results were not entirely satisfactory, although there was less discoloration found in the containers so handled than in those packed in the usual manner, without vacuumization. There is a possibility in some of the fruits which discolor so easily that intra-molecular oxygen, or that chemically combined in the fruit tissues, may function in oxidation as well as atmospheric oxygen, and that dissolved in the tissue juice.

Since refrigeration is the corner-stone upon which frozen pack rests, it should be evident that rapid cooling and adequate freezing of the fruit mass are essential.

With the large containers, such as the barrel, quick cooling has presented many problems, because the center of the fruit mass in such a container may remain for days in an unfrozen condition if refrigeration is inadequate. Frequently many hours elapse before the center temperature is lowered to 40° F., below which the activity of the molds, yeasts and bacteria is markedly retarded.

For the small containers the problem of rapid cooling is materially lessened, particularly if some methods can be developed for cooling them individually after packing, rather than after they have been assembled for shipping in cartons or boxes, as is generally done at present.

These packages naturally insulate their contents, more or less, against temperature changes, even when they are refrigerated without the lids or have openings cut in their sides and are properly stacked in storage. To cool and freeze fruit in small containers protected in this way seems to us to be an uneconomical procedure, and one which invites distinct improvement.

It seems highly desirable, however, once the fruit is frozen, to utilize the insulating character of cartons and boxes by then packing the containers in them, preparatory to storage or shipment.

It seems reasonable also to assume that a better frozen product will be obtained more easily if the fruit mass and the sirup are kept in slight motion during cooling and freezing, so that sirup distribution is uniform, heat transfer is facilitated and ice crystallization is encouraged. If these results are accomplished it is likely that extremely low temperatures will not be required to properly refrigerate and preserve frozen pack.

It is obvious that this thought implies a somewhat different orientation in frozen fruit handling and freezing practices than now commonly exists. The suggestion of it is made with understanding and full appreciation that it will require thought, money and experimentation to develop such new methods. Notwithstanding this fact, I believe that it is a matter which merits the fullest consideration by the frozen pack industry.

The phenomena of freezing in plant tissues has been studied for many years. Hence, it is a well-established fact that ice crystallization in fruit tissues ordinarily begins not within the cells themselves, but in the intercellular spaces, where the ice crystals may grow further in size through the crystallization of water, withdrawn from the living protoplasm of the cells.

This process may continue until the cell shapes are pressed and distorted by the ice masses, and in rapid freezing at low temperatures there may eventually be a rupturing of the cell walls.

Inherent, however, the freezing of fruit tissues is really a drying phenomenon, due to the more or less rapid withdrawal of water from the cell contents. The physiological character of these may finally be irretrievably altered, so that the tissues, or portions of it, may die. In this the piercing of the cell walls probably plays a less important part than is popularly supposed.

Upon thawing much of the extracted water may be reabsorbed by the tissues, but these never quite recover their original character.

Due to the manner in which freezing progresses in fruit tissues, there is probably some variation in freezing rapidity possible without immediate striking effects being observed, for instance, in the texture. It must also be remembered in studying this phase of frozen pack that much of the water extraction

from fruit tissues, prepared with sugar or sirup, may take place as a result of osmosis priod to freezing. Obviously, with increasing sugar concentrations in the liquid about the fruit, there is increased osmotic water extraction.

We have not as yet had time to demonstrate experimentally in what manner various degrees of osmotic activity prior to freezing may affect fruit texture, or whether there are real differences betwen the texture of fruit, frozen with extreme rapidity, and that frozen after osmosis has gone on for some time.

Other experiment which we carried on with Marshall strawberries packed in small containers without sugar, with sugar and with sirup, and frozen at several temperatures from—10° to 20°F., gave no indication of significant texture changes. The advantage gained seemed to be rather in less discoloration and in the possible prevention of surface mold and deterioration at the lower temperatures, although with clean fruit the last-named feature does not seem important.

In order to properly appreciate the character of the cooling and freezing problems it is necessary to recall that refrigeration must do three things for frozen pack fruit: (1) it must reduce the so-called field heat; (2) it must care for the heat of fruit respiration, which is an appreciable factor at higher temperatures, and (3) it must dissipate the heat of fusion which occurs as a result of ice formation, and which amounts to 144 British thermal units for every pound of water that is frozen.

As a general commercial practice at the present time, freezing at 0° to 10° F. room temperature is probably most desirable. Experimental work remains to be done to determine whether cooling and freezing can better be accomplished by immersing the containers in cold brine or in some other refrigerant. If this proves to be a fact, then the question of suitable, as well as economical, temperatures remains to be determined.

A few of the curves depicting the rate of cooling of fruit in small containers, when exposed to different temperatures, are given merely as illustrations, but this phase of our investigations has not been completed.

Equally important with appearance in frozen pack may be mentioned texture, flavor and aroma. Texture is largely predicated on two factors: Maturity and sugar concentration of the liquid surrounding the fruit.

Emphasis has already been placed upon the importance of using fully matured, but not over mature, raw material for frozen pack fruit. Our experiments have also shown that texture in fruits is affected favorably by the use of sirup in suitable concentration. Sugar pack fruit has invariably been more limp, and sometimes leathery in texture and shriveled. The water extraction as a result of osmosis from fruit packed with sugar has already been mentioned. With sirups this water deficiency has already been taken care of, partially at least, and as a result much less water loss occurs from the fruit tissues.

Packs prepared with sirups having a low Brix reading, with water or with fruit juice alone, or those packed with no sweetening, generally have had a soft, mushy, undesirable texture.

For the berries a 70° sirup gave the best texture, and 50° sirup appeared to be the minimum. Although 70° sirup was the maximum concentration used, this does not preclude the possibility that sirups of higher Brix readings might also be very desirable. It must be remembered, however, that these more concentrated sirups must be warmed in order that they may flow freely under commercial conditions. Of the sugar packs a 3.1 to 5.1 pack seemed most suitable, but not so good as the sirup pack.

For cherries, firmness of texture increased markedly with sugar concentration. The sugar pack of sour cherries, for instance, in 33.1 to 1.1 packs showed this was true to an undesirable degree, and the cherries were too tough in texture and showed shriveling. This fact may, however, not be so significant if the fruit is cooked after thawing. The ideal pack was found to be a 30° to 40° sirup with 6.1 or 7.1 sugar packs close seconds and with particular favor being given the sirup packs because of relative freedom from toughness.

Cherries that have been bruised in packing seemed to have a softer texture, particularly in sugar packs and in those put up unsweetened. Unpitted cherries always seem to show some splits after freezing, regardless of the pack.

For apricots and peaches a 40° to 50° sirup gave best results. The texture of sirup packs always seemed softer than that of canned fruits, but was firmer and more desirable than that of sugar pack or unsweetened apricots and peaches. Where carbon dioxide gas had been used to replace the air in the container, the texture of peaches was softer and the fruit tissues showed signs of disintegration.

Frozer Bartlett pear texture was very unsatisfactory. Frozen cantaloupes had a leathery texture which was inferior to that of fresh fruit. Peeled rhubarb had the best texture when covered with a 60° to 70° sirup and the same was markedly true for gooseberries.

It must be emphasized that texture is often linked to varietal characteristics or to such seasonal variables as water content of the fruit. The general observations here recorded were sufficiently definite to probably outweigh these seasonal variations, which are characteristic of plant life generally.

From the standpoint of agreeable flavor, the more concentrated sirup packs were generally favored. For fruits the Brix readings of the liquid surrounding the fruit after freezing and thawing generally fell within the range of 30° to 35° for most agreeable sweetness and best flavor, although occasionally they occurred in the 25°-30° range. With more acid fruits the most agreeable testing lots of ten had Brix readings in the range of 35° to 40°.

There may also be seasonal variation in fruit activity, and so in establishing desirable sugar or sirup concentrations a sufficiently wide range should be chosen.

E. E. CHASE
Ex-President, N. C. A.

In the sugar packs there was generally more variation in sweetness and agreeable flavor in any lot due to lack of uniformity in the sugar mix and solution. The fruit which was not wetted by the sirup, and as a result had oxidized, invariably had an inferior flavor.

With raspberries and loganberries a 60° or 70° sirup gave the most agreeable flavor, and the minimum appeared to be a 50° Brix sirup. A 3.1 sugar pack was often too sweet; a 5.1 was generally agreeably sweet, and a 7.1 not sweet enough. Blackberries were an agreeably sweetened pack when prepared with a 40° to 50° sirup.

When sirups at temperatures of 58°, 75°, 100°, 125°, 150°, 175° and 200° F. were added to strawberries, the product appeared to be slightly lighter in color when the hot sirups were used.

For apricots and peaches a 50° to 60° sirup pack seemed generally to be the most desirable of all, while the 5.1 packed seemed to be the most satisfactory of the sugar packs.

Where oxidation had occurred in apricots or peaches there was a strong bitter after-taste of apparently glucosidic origin, which was masked, however, by the added sirup or sugar.

For sour cherries a 70° sirup pack was most agreeable in flavor, with 3.1 or 5.1 sugar packs next in flavor. All sour cherry packs had a bitter astringent after-taste, apparently linked with immaturity of some of the fruit.

For sweet cherries sirups in the Brix range 30° to 50° were most pleasantly flavored, while 7.1 or 6.1 sugar packs were also quite agreeable. Unpitted cherries had a flavor suggestive of benzaldehyde, which did not seem agreeable to most of those who examined the lots.

The flavor of gooseberries was most agreeable when they were packed in 60° or 70° sirup, while cantaloupe was liked best when put up with a weak salt brine.

Glucose sugar alone was of no value as a sweetening agent. Blucose sirup, however, gave a rather satisfactory product with strawberries, as did invert sirup, which was used in an effort to obtain greater sweetness with a lesser amount of sweetening agent than when cane sugar sirup was used. Alfalfa honey, when added to strawberries, gave an attractive and pleasantly flavored product, and suggested a possible frozen fruit pack for those to whom the use of cane sugar is forbidden.

Much attention has been given by investigators and by the frozen pack industry to the prevention of surface molds, fermentation and decomposition. Insofar as the latter two problems are concerned, the solution is easily stated. Our experiments have repeatedly shown that when clean, fully ripe but firm fruit is used, when the packing is done in a clean way, and when cooling and freezing are reasonably rapid and the fruit is kept frozen, services which can now be obtained in responsible, well-managed cold storages, there is little need for apprehension regarding fermentation and decomposition up to the time the consumer obtains the frozen fruit.

What occurs thereafter is quite beyond the control of the frozen pack industry at the present time. As has been said, the future success and extension of frozen pack seems to me to reside very largely in the development of suitable distribution channels and in consumer education, so that the frozen product will be handled properly in a manner which will retain the desirable qualities which it may have possessed after packing and freezing.

These are facts which perhaps cannot be too frequently stated, while the frozen pack in small containers is still an infant industry. They are restated here, even though they do not pertain directly to the technical aspects of fruit packing and freezing, because they will be the ultimate determinants of frozen pack success. Obviously, there is no need to study the problems of packing if there is no adequate distribution for that which one intends to pack, and if there is no immediate prospect of there being such a development.

The problem of surface molds on frozen pack fruit is often not readily solved because of the widespread distribution of the fungus spores. Molds will develop even on first-class fruit, if the spores are given an opportunity to germinate, and they will grow slowly in cold storage temperatures. However, the shielding of the fruit surface with sirup of suitable concentration during the cooling and thawing periods seems quite effectively to inhibit their development.

The question of container choice for frozen pack is indirectly related to the basic problems of frozen pack physiology. While observations were made during the season on different types of containers, many of these are of more particular interest to the manufacturer. A tightly sealed container, which is made unfit for reuse upon opening, should be an essential characteristic regardless of the material of its construction. Certain advantages are claimed for each type by its proponents. Certain disadvantages may also exist. The evaluation of these and the decision as to which contianer type to use can better be made by the prospective packer himself, if he has the basic facts developed.

In our experiments there seemed to be very definite places for each of the types which we used—the tub-shaped paper container, the pound flat tin can and the small glass container, the latter two being capable of vacuumization. No one type was so desirable as to exclude consideration of the others.

Hence, in the packers' choice, it is probable that elements of relative cost, susceptibility of the container material to staining or chemical decomposition, ease of closure, sturdiness and attractiveness will play important parts. The low cylindrical types of container seem to be in favor in the packing operations in the Northwestern producing sections, because, among other advantages, they are handled more easily and display less obviously the unavoidable shrinkage which occurs to a greater or less degree in all frozen-pack fruit.

Our experiments seem to indicate that a head space after thawing of not more than 8-16 to 12-16 inch from the top of the container is satisfactory, the amount varying with the type and shape of the package. To have accumulated considerable information as to the original fill required to obtain this headspace, but it is not within the scope of this discussion to consider these in detail. Each packer will probably experiment for himself, in any event, in order to avoid slack fill as well as swells because of overfill and expansion of the fruit mass during freezing.

There is less possibility of slack fill when sirup packs are used because there is invariably less volume shrinkage.

The results of the experiments in which carbon dioxide snow and ice were used were not conclusive, except in one respect, that neither of these refrigerants were sufficiently effective in cooling warm fruit in containers quickly to low temperatures. The physical reasons upon which this fact is based need not be considered here.

This lack of success with warm fruit does not preclude the effective use of carbon dioxide as a frozen pack refrigerant during retail distribution. It is our aim to examine this important matter more thoroughly.

We have not completed and therefore cannot now report the results of the studies on volume shrinkage of strawberries packed in different sirup concentrations and subjected to osmotic activity at different temperatures for different time periods prior to freezing, as well as the shrinkage resulting from the water extraction due to freezing.

Our experiments did not deal with fruit, repacked from large containers in the consuming markets. Hence, we can make no positive declarations about this type of frozen pack business. However, there is a belief shared by many that eventually the packing of small containers will be done best in the producing sections, where the details of a high quality pack can be attended to more readily and with perhaps greater success. Until this question is answered in experience and time, every effort should be made by the frozen pack industry to insure repackaging only under such conditions as will give a product which will attract and please the consumer. It is vital for the future of frozen pack to emphasize at this early stage of its development that an unsatisfactory repackaged product will have a lasting effect upon the consuming public as the first impression of a new method of food preservation.

Recapitulating, then, our experiments in a general way indicate: (1) that for small container business at the present time the frozen packing of strawberries, raspberries, loganberries and to some exten sour cherries, is no longer in the experimental stage; (2) that the frozen pack behavior of blackberries, black raspberries and sweet cherries is not yet sufficiently understood in order to insure consistent success; (3) that for apricots and peaches even more technical questions remain unanswered; (4) that some fruits, such as Bartlett pears and melons, do not seem suited for frozen pack, and finally (5) that frozen packing of vegetables should be considered at the present time entirely in the experimental stage, and should not be attempted commercially until there is no shadow of doubt that frozen pack vegetables are safe for human consumption.

The investigator of packing and handling problems is obviously not qualified or privileged to make a prophecy as to the future of frozen pack in small containers, except indirectly, insofar as the technical aspects are concerned. Some of the latter have been considered in this discussion, and the impression may now be left with you that there is still much to be learned in this connection. This is true, but it is still more important to remember that the full expansion of the frozen pack small container business awaits not only the solution of packing problems, but also the development of adequate equipment for handling and packing this commodity on a large volume basis, and the working out of perhaps the most difficult problems of all, those of transportation, consumer education and retail distribution.

CHAIRMAN LUM: We want to thank you very much, Mr. Diehl, for this address.

Our next speaker, folk, will address us on the "Quality of Canned Fruit in Relation to Pie Thickeners." He is a buyer and a big user of our canned fruits. I take pleasure now in introducing Mr. H. E. Turley, of the Stein Hall Manufacturing Company, Chicago. Mr. Turley.

Quality of Canned Fruit in Relation to Pie Thickeners

By Harold E. Turley

Stein-Hall Manufacturing Company, Chicago, Ill.

MANUFACTURERS of canned fruit and pie thickeners have a number of problems very much in common. Each one is attempting to place in the market a saleable product which will please the greatest majority of pie bakers.

The worker in the plant, whether he is a cooker in a large pie bakery or the foreman in a small plant, is inclined to blame some ingredient for a poor batch of pie stock rather than place the blame upon himself.

The writer is a demonstrator who works in bread and pie bakeries and quite often comes in contact with the man who is always looking for an alibi when the number two batch is not like the previous one. Quite often we have heard a plant foreman or a cooker remark, "This shipment of pie stock is certainly not like our last one or this shipment of tapioca or starch does not thicken as well as the last one." In some instances these complaints are fully justified, but in most cases an "off" batch is due to errors or poor judgment.

We have made demonstrations in large commercial pie bakeries and in small neighborhood bakeries where only a few pies a day are made. We wish to commend the manufacturers of canned fruit for the quality of pie stock they are offering to the baker. Most of the pie stock examined in the various plants is of such a quality that we do not see how anyone could offer a single complaint. Perhaps the human or inhuman element in us has made us complainers, so a little later on we will listen to a few of these complaints.

The personal element is also a factor in the successful sale of a particular brand to a certain plant. Frequently we have heard a foreman remark, "I don't like the salesman from the Smith Company," or, "I don't like the demonstrator from the Jones Company." Moral—you may have an excellent grade of pie stock at a very good price and the sale may be lost due to this personal element.

We also meet the professional knocker who remarks, "The boss has been buying this particular brand for seven years and I don't want to make any changes." In a few instances any attempt to sell the head of the firm will only meet with failure, for the worker in the plant may handle your material in such a way that its quality will not compare with the brand now in use.

As previously stated, we have listened to a few complaints from pie bakers in regard to shipments of pie stock. Perhaps the most common complaint that we have heard is in regard to a variation of solidity of pack. This variation of solidity of pack necessitates an adjustment of the amount of water and pie thickener added. In most cases, this variation in a particular brand is very negligible. However, at times it is very annoying to the man who is held responsible for a uniform pie stock. We are fully aware that the moisture content of a fruit varies so it would not be economically possible for the canner to pack a stock with exactly the same moisture content in each can or lot. However, there is some room for improvement on this particular angle of canning.

A number of bakers have complained of a faded color in some fruits; especially is this true of apricots. As a rule when color is added to offset paleness, the color appears in the crust. Recently a pie baker told me that he had added tartrazine to offset a pale color of some pie stock and the color appeared in certain spots in the crust.

In very rare instances, we have seen evidence of insect infestation. Of course, this raises the protein content of pie stock, but most people prefer beefsteak. In a few cases we have opened stock that was fermenting. This was due, no doubt, to pin holes in cans. Pie bakers at times complain about a discoloration of fruit due to an oxidation process. This is especially true of cold pack stock.

The baker desires a very firm stock. The berry fruits can easily become disintegrated in handling in large-scale operations and in the cooking and baking process. The baker desires a raspberry pie rather than raspberry jam between crusts.

A variation of pectin content will affect the thickness of the finished pie. However, this factor is beyond our control.

Fruits vary in acidity. A quantity of starch or tapioca necessary to thicken an apple pie will not thicken the stock of a very sour cherry. There is also a variation in acidity of the same kind of fruit sufficient to noticeably affect the thickening powers of tapioca or starch.

A canner who is selling either directly or indirectly to the pie baking trade should have some understanding of how fillings are made and should know some of the problems the baker has to meet.

A pie thickener is used along with the fruit and juice for two reasons, namely: A pie should be firm in order to facilitate its handling in the bakery and in distribution to hotels and restaurants. The majority of consumers who eat a portion of pie wish to consume the fruit juices as well as the solid portions of fruit and do not like a "messy" pie in which the juice runs over the plate.

The pie baker uses several methods of preparing pie stock but the most successful one as observed by the writer is given as follows: The juice, and water if added, is brought to the boiling point along with the sugar and thickening agent such as starch, tapioca or a combination of the two. The stock is allowed to cool to approximately 175 degrees F. and the fruit is added and stirred in with the juice, water and thickening agent. The pie stock is now allowed to cool before it is placed in the pie tin covered with a bottom crust of pie dough. The top layer of pie dough is added, trimmed, and the pie is placed in the oven at a baking temperature of approximately 425 degrees F. for 25 minutes.

The average pie baker desires a pie in which the juice is thickened to the point of just being able to be held with a slight degree of firmness along with the solid portions of fruit.

As already stated, the acidity of fruit materially affects the thickening powers of either starch or tapioca. A good grade of corn starch or tapioca will give uniform results in their ability to thicken a certain quantity of juice or juice and water. A granular tapioca has greater thickening powers than a tapioca flour, consequently a tapioca with various sizes of granules that does not run uniform will not give uniform results.

Whenever a pie baker complains about a lack of uniformity of his pie stock, he can place the blame upon his foreman who did not add the correct quantity of thickening agent or cook the batch at the correct temperature, or that there was a variation of acidity of this lot of a certain kind of fruit compared with the last shipment.

Without materially raising the cost of canned fruit we wonder if it would not be possible for the canner to give to the pie baker a pie stock with a more uniform acidity. This would assist the pie baker in giving to the customer a more uniform pie. A greater sale of commercial pies means a greater consumption of canned fruit.

If it is economically impossible for the canner to hold the acidity of a particular pack of a certain fruit uniform, the pie baker should adjust the quantity of thickening agent added to any variance of acidity of the pie stock. A pie baker who is not baking pies on a large scale cannot afford the services of a chemist but he can with a small outlay of money, purchase the necessary equipment for the determination of acidity of his pie stock. A ten grain sodium bicarbonate tablet is dropped in a measured quantity of fruit juice contained in an erlenmyer flask connected with a gas burette. The number of cubic centimeters of gas evolved in a certain length of time indicates the degree of acidity for that particular lot of fruit. A certain quantity of thickening agent can be added to thicken a quantity of pie stock for that particular acidity. This method is not given as a means of determining the acidity of fruit juices according to the standards of accuracy of a chemist, but it is sufficiently accurate for the use of the pie baker who desires to place upon the market a pie with uniform thickness.

The canner may feel that this information will not benefit him in any way, but such is not the case. A greater pie consumption of commercially baked pies means a greater sale of canned fruit.

As a thickening agent, tapioca gives the most satisfactory results. The use of tapioca in the cooked filling produces a pie that is nearest in excellence to a quality home-made pie. Corn starch has a flavor of its own, while tapioca is flavorless and absorbs the natural color and flavor of the fruit. Tapioca has a tendency to hold those precious aromas of the fruit during baking. Corn starch imparts a cloudy appearance to the pie stock, while tapioca gives a beautiful transparent filling, giving one the impression that the fruit juice itself had partially jelled. The use of corn starch has in many cases materially reduced the consumption of baker's pies. The canners of the country should do everything in their power to increase the use of tapioca among pie bakers, for it will mean an increase in consumption of baker's pies and a corresponding increase in the sale of canned fruit.

The canner should pay more attention to uniformity in solidity of pack. It is very annoying to the pie baker to have to make adjustments in amounts of water or thickener when a new shipment is received.

The flavor of the stock can be improved with greater care in selection of varieties and in the commercial packing in the plant. The fruit should be firm and the natural color preserved as near as possible.

It is hoped that the foregoing information will assist the canner in increasing the sale of canned fruit to the pie baking trade. Let your slogan for 1930 be, "More and Better Pies."

CHAIRMAN LUM: Thank you very much, Mr. Turley. We always like to get the slant of the buyer. The next time we have a car of cherries rejected out of Chicago I am going to yell my head off about how the pies are made. Maybe it is your fault. The next order of business, and it will be very short, is the election of officers.

THE ELECTION

For chairman next year of the Fruit Section J. C. Richendorfer, Emerson, Washington; Secretary, G. B. Rollins, Grand Rapids, Michigan.

If there are no other nominations I will entertain a motion. Thank you. So carried. (Applause.)

I have a half minute, which is a sufficient length of time, I think, to hear from Mr. Ed Burns, of the Pacific Northwest, with regard to swelling. Do you know anything about that?

MR. ED BURNS: It is to be continued until our next meeting.

CHAIRMAN LUM: Thank you very much. If there is nothing to come before the house we will close on time.

The meeting adjourned at 12 o'clock.

Pea Section

Wednesday Morning, January 22, 1930, 10:00 A.M.

W. G. Glascoff, Waupun, Wisconsin, presiding.

THE meeting of the Pea Section of the National Canners Association convened at 10. o'clock, Mr. W. G. Glascoff, Waupun, Wis., presiding.

CHAIRMAN GLASCOFF: The first thing that we will take up in our meeting will be the appointing of the Nominating Committee, so they can start to function. I am going to appoint on that committee Mr. John Kraemer, of Wisconsin; Mr. Bernard, of Minnesota; Mr. Bennett, of Michigan, and Mr. R. S. Thorne, of Geneva, N. Y. If those four gentlemen will retire and do their work and report back as soon as they can we will be very much obliged.

The Chairman's report, if there is such a thing, will be given a little later on. We are going to depart a little bit from our scheduled program. The first is an address by Mr. Braithwaite, of the Division of Simplified Practice of the Department of Commerce. Mr. Braithwaite.

(See the Report of a Study of the Canning Industry, made by the Division of Simplified Practices of the Department of Commerce before the Wax and Green Bean Section.)

CHAIRMAN GLASCOFF: Thank you, Mr. Braithwaite. Have you any questions you would like to ask on this subject? Gentlemen, this is a matter of pretty vital importance, not only to the Pea Section, but to the whole canning industry. If any of you have any questions, or there is any additional information you desire, I am sure Mr. Braithwaite would be glad to answer them.

MR. BRAITHWAITE: I think, Mr. Chairman, we are getting away somewhat from the idea of standardizing on price rather than containers; I think I see evidences of getting away from it. Of course, I am not at liberty to discuss price at all, because that is not our problem, but I do see evidences of unfair competition to standardize on definite sizes of containers and eliminate some of this unfair competition brought about by introducing odd sizes or shapes that look very much like the size the other fellow is putting out.

CHAIRMAN GLASCOFF: If there are no questions, we will next have an address on "Big Pods and Little Peas." I do not know just what this is, but it sounds as if it would take in a lot of territory. Mr. Harvey R. Burr, Secretary of the Wisconsin Canners Association, of Madison, Wis. (Applause.)

Big Pods and Little Peas

By H. R. Burr, *Secretary*
Wisconsin Canners Association

I FEEL that I owe you all an apology for attempting to discuss a topic so inconsistent and indefinite as this one, "Big Pods and Little Peas." I know there has been a question in your minds regarding this subject. You have wondered what under the sun it could possibly mean. Does it refer to varieties of seed peas? Is it going to outline a method of producing more little peas in bigger pods? Does it have any personal application to individuals or pea canning companies?

If in spite of all the convention attractions, the party last night, and the desire to sleep late this morning, your interest and curiosity has brought you into this session, I am satisfied, Mr. Chairman, that the assignment of this topic as the first number on the program has fulfilled its function and we can proceed to forget it as a topic.

I will say this, however, that there is a possible relation between this subject and the pea canning industry that we cannot afford to overlook. If some artist of ability and imagination could paint a composite of all the pea canning factories in the United States, blend them all together in one gigantic unit and then throw this picture on the screen, show it in action with movie-tone effect, the noise would be terrific, the activity inconceivable, the money involved enormous and the output relatively small in proportion to the size of the physical properties represented. This picture might then be appropriately named "Big Pods and Little Peas."

This may be rather a surprising statement to many of you, nevertheless, I can say advisedly that the potential capacity to produce canned peas in this country with the equipment now in existence is approximately 56 per cent greater than our present total output. Every plant manager in this room knows that given proper growing conditions, good seed, efficient operation and orderly marketing, he could turn out 60,000 cases where he now turns out 40,000; 150,000 cases where he now turns out 100,000 and so on.

The facts of the case are that the great majority of these individual plants are constantly scheming and planning to do this very thing whenever they think they can get by with it, without the other fellow knowing about it, or because of their superior methods of operation, they feel that they are justified in such action.

Now there is nothing fundamentally wrong with this ambition to pack more peas, this desire for greater volume. It is a perfectly normal condition. It is this spirit of initiative that makes for progress, and that has carried this great industry forward with constantly accelerated speed for several years past. Remove or restrict this ambition, this possibility of expansion, and the industry immediately loses its attractiveness for both money and brains.

However, a program of greater production without a market, speed without control, ambition and initiative without fore-sight and a definite objective are dangerous; and there is plenty of evidence that the pea canning industry is about to launch such a program with only one objective in view, that of greater volume.

A good pilot never tries to gain altitude faster than the H. P. of his motor will permit. He levels off and flies on an even keel until sufficient speed is attained to warrant another attempt to life the ship to a higher level. A "stall" invariably results if poor judgment is used in this maneuver, and there is only one way out of a "stall" and that is to dive straight downward until sufficient speed is attained that permits control to be effective again.

We are all anxious to see this pea canning industry move forward and gradually upward, going along on an even keel at times, holding its own in competition with other canned foods and never diving towards the earth in an attempt to pull out of a "stall."

It has been my privilege this past season to have been closely associated with the official grading service on canned foods in Wisconsin. This work gave me an opportunity to make a detailed inspection of samples representing approximately 5 million cases of canned foods, of which 4½ million cases were peas and the balance beans and corn. From this experience, I have been able to form some rather definite conclusions regarding the methods of growing, canning and selling these commodities. I have attempted with the other licensed graders not only to pass judgment on the quality of the samples submitted but to analyze and classify the reasons for high scores, low scores, and in some cases no scores at all.

This much is evident, that "Big Pods will never produce Big Peas," that our present equipment can never run to capacity, until there is a very definite, sincere and prolonged attempt to pack better peas to be distributed under a few nationally advertised labels, which labels in turn tell a true story to the consumer as to the quality of the peas in the can under this label. There are thousands of homes in this country that do not use their quota of canned peas simply because they do not like them in the form or condition in which you and I are placing them on the table.

Now I have seen samples of canned peas this past season, plenty of them, that would satisfy the taste of the world's greatest epicure. We could sell 25 million cases per year if the entire pack were of like quality. On the other hand, I have seen other samples of peas, plenty of them, the quality of which could never by any possible manner or means induce a consumer to ever buy a second can. This is not an indictment against pea canners in Wisconsin or any other section. We have examined samples from every pea canning state in the Union and one section is no better nor worse than the other.

There is room for improvement all along the line and I propose now to point out, if I may for the balance of this discussion, some of the causes of poor quality and possibly suggest a few simple remedies.

First: Soil conditions and the use of commercial fertilizer and inoculation. Uniformity of flavor and color in the can originates in the soil. Just because peas are a quick growing crop many field superintendents have permitted a high degree of carelessness to creep into the selection of locations and methods of planting. Peas will grow on poor soil, yes, but quality peas in the can never came from a soil deficient in nitrogen and phospheric acid. Potash, we don't need. It is a fibre builder; it toughens the entire plant structure and hastens maturity.

Nitrogen fertilizer costs money, but inoculating the soil with nitrofying bacteria permits you to obtain this element from the air at little or no cost. Phospheric acid delays maturity and thereby induces full pods of nice tender peas. Many fields have grown peas for 20 years at least without rejuvenation of any kind. How long would that filler or blancher operate under similar conditions?

Study this problem with your growers. Have samples of soil from every field analyzed and, if necessary, engage the services of a "soil doctor" to prescribe the proper treatment. You will be amazed at the results and improvement of quality in the finished product from such a program of soil improvement.

The production of canned peas in the United States has experienced approximately a 40 per cent increase in the last 10 years. Naturally the demand for canners' seed peas has increased in like measure. This has placed somewhat of a burden on the commercial seedsmen who have not only been expected to supply this increased demand, but who have also been expected to improve and develop better seed stocks at the same time.

I feel that this improvement of varieties has not kept pace with the demand because the process of variety improvement is naturally slow and results are often disappointing. The Department of Raw Products Research of the National Canners Association under the direction of Mr. Charles Woodbury, together with the experimental and trial ground work of the Agricultural Colleges in New York and Wisconsin, have accomplished wonders along this line. The commercial seedsmen have also carried on their own trial grounds and are deserving of great commendation for their unrelenting search for improved strains and varieties.

In spite of all this fine work, there has been an evident loss of quality in many Alaska seed stocks and the introduction of Sweet varieties that have not qualified as desirable for canning. Disease resistant strains of desirable canning quality are still mighty scarce. Stocks advertised and sold as the "acme of perfection" prove to be disappointing at harvest time. Stocks supposed to be of the same origin show evident mixtures in the can.

Understand I am not blaming anybody for this state of affairs. It is just one of those problems that demands our serious consideration and that will continue to require the assistance of the most highly skilled specialists for many years to come. Pea diseases will increase before resistant varieties are available in an appreciable quantity. "Junk" seed, seed of unknown origin and seed "off the bargain counter" will continue to "raise cain" wherever it is used until such time as canners and seedsmen arrive at a mutual understanding of each others problems, proceed to "debunk" the seed business and work together in a spirit of absolute trust and confidence in each other.

Harvesting: Due to uncontrollable weather conditions, the maintenance of a carefully planned harvesting schedule is often difficult and sometimes impossible. Furthermore, the expert judgment of field men as to the proper time to harvest a given crop is oftentimes offset by inadequate equipment and failure of the grower to respond promptly to "cutting orders." Many times the cutting schedule is permitted to run on regardless of viner capacity resulting in serious delay at the viner station. Cut vines lay out in the field for hours and sometimes all day and all night. Possibly some of this delay is necessary in order to operate the factory at capacity, but there is no excuse whatever for 20 to 30 per cent of the day's run at the plant coming from vines that have been cut the day previous.

Peas from these vines are mixed in with peas from freshly cut vines and the result is a very definite reduction in quality. This is an evil that has crept into the problem of factory management and is directly responsible for poor quality in the can whenever this condition is allowed to develop to any great extent. The job of the field man is not to supply the factory with all the raw product it can possibly handle regardless of quality, but his job is to supply, in an orderly manner, all the raw product the factory can handle with the least possible delay from the time the vines are cut in the field until the shelled peas are dumped into the cleaner.

I know all about how this crop piles up, what unexpected delays there are, how the truck gets stuck, the belt slips and the mower breaks down. I also know how easy it is to put a boy on the mower and tell him to keep cutting "till the cows come home." What a feeling of satisfaction it is to report in at night that every viner station is loaded up ready to start in the morning and several acres more cut down as a reserve supply in case all the mowers go on the "blink." We need this "continuous process' idea worked into our field operations as well as in the plant before we can expect canned peas to appeal to the consumer as having that "real fresh garden flavor."

Viner Operation: I realize that I am treading on thin ice when I attempt to say anything about the mechanics of any machine or method used in the industry. Each machine manufacturer is constantly striving to improve his method and I find no indication anywhere along the line of any canning machinery builder who is completely satisfied with results as they are. Failure of machines to function properly is, in the majority of cases, due to inefficient or unskilled operation.

Variable speed control on viners is a foolish investment of money if the speed is never changed from the start of the season to the finish. Adjustable beater pitch amounts to nothing if adjustments are never made. Setting viners in tandem, that

H. R. BURR
Wisconsin Canners Association.

is running vines through the first machine at low speed for the more mature peas has been demonstrated as a possibility, but there is a question as to the results to be gained in proportion to the added investment.

Out of the nine major operations in the plant, four of them are designed to remove split or broken peas. This waste of product is enormous at times and it would seem unnecessary any time. It would seem wise, therefore, to eliminate as much as possible of this waste at its source, in the viner, rather than throw it away or allow it to create a nuisance at the plant.

Methods of Cleaning and Conveying: The movement of raw product through the initial processes of cleaning and grading are subject to very little criticism. Recent improvements in the way of water conveyors, pumps and separators indicate a tendency to clean more effectively and handle this raw product in a much more gentle and sanitary manner. Washing should be accomplished as promptly as possible after the shelled peas arrive at the factory. Delay at this point complicates the problem by making it more difficult to wash effectively and, furthermore, may result in serious loss of flavor and color if peas are permitted to remain in the field boxes or storage bins.

It was oftentimes possible in grading an entire pack this past summer to trace each day's production by the characteristic variations in color and flavor. Starting in the morning with peas cut the day before, sometimes heated in the load or pile at the viner station, then passing to the freshly cut lots of greatly improved quality during mid-day and afternoon, with a gradual declining quality in the evening and finishing up with peas that had soured in the field boxes or storage hoppers as the tail end of the day's run.

Gravity or Brine Separators: As long as the day's run originates in many different fields, variable in size and character of soil, just that long will there be variable degrees of maturity in the mixture of raw product as it arrives at the plant. Under the most competent and experienced field supervision, this mixing of grades will still be present to a greater or lesser degree.

It is highly important that these grades be separated as far as possible by an inspection of the raw product before dumping the field boxes. Specific gravity or brine separators have recently been introduced that are designed to assist this separation of grades in a much more efficient manner than is possible

by any form of visual inspection. When properly installed and supervised by skilled operators, they have demonstrated their usefulness and value by improving the uniformity of grade in the finished product.

Changes in the specific gravity of the brine used permit a wide variation in the results obtained. It was interesting to find a small lot of Alaska fives, this past season, that graded fancy with a score of 91. Upon investigation, it was found that they were the result of running a lot of this sifting size through a high density brine separator. We found several packs that had been materially improved through the application of this principle. Bear this in mind, however, that you are not dealing with an automatic machine. Careful, skilled operation is necessary if satisfactory results are expected.

Blanching: Perhaps the most outstanding and most common defect in the samples graded was that of over-blanching. There is evidently an idea existing that when peas are over-mature, the remedy is to blanch the "tar" out of them and some lots might just as well have been tar as to have masqueraded as canned peas. "Pea soup" or "Irish mush" would have been a more appropriate name.

I am going to predict a complete and revolutionary change in blanching methods in the near future. Dr. Bigelow says that over-blanching is dangerous, and I agree with him. Dr. Cameron will discuss blancher contamination for you just as soon as I finish reading this volume. Far be it from me to say anything along this line in the fact of such unquestionable ability and talent, except just this, that the finest flavored sample of canned peas I have ever tasted came from a lot of raw product fresh from the field and viner, thoroughly washed in clean warm water at 180 degrees F., and packed in a vacuum can. The comparison between this method and that in common use is obvious and presents an objective for machinery designers, bacteriologists and processors to shoot at.

I have this recommendation to make, however, that under present methods of blancher operation where temperatures and time are held at the maximum, more attention should be given to changing the blancher water frequently and more care be placed on the washing and screening of the peas after the blanch. If we are going to blanch the "tar" out of these peas, it will improve the appearance and flavor of the finished product if this "tar" is kept out of the can.

Brine and Brine Formulaes: Thanks to the work of Dr. Cameron, Dr. Bigelow and the laboratory staff of the National Canners Association. Considerable improvement is evident in brine mixing equipment as well as methods of operation.

We find, however, almost as many brine formulaes as we have canners. It seems to be a case of "what suits me must suit the rest of the world." I can fully appreciate how difficult it is for large buyers to obtain their total requirements of uniform flavor under these circumstances. Certain variations in brine formulaes are necessary as growing conditions are not all the same but there is no excuse for a canner who decided his crop was so poor that it didn't deserve any sugar in the brine or for another one who permitted his "brine chef" to measure salt directly out of the sack into the tank from which the pipe line led direct to the filler.

The Wisconsin Canners Association will, this coming season, attempt to develop a degree of uniformity of brine formula throughout the state, and may I recommend that other State groups give some thought to this detail also.

Enamel-Lined Containers: I was somewhat skeptical last spring regarding the proposal to use a large percentage of enamel-lined tins for peas. I felt that possibly we were not far enough advanced in the perfection of this enamel to justify the risk other than on an experimental basis.

Recent contracts with distributors and canners have convinced me that this new type of container for peas does improve the appearance of the can when opened and I am glad to report approval on the part of several groups of consumers whom I recently questioned regarding this matter. Some difficulty has been reported regarding side seams on enamel cans but I am certain that it is not serious and will be overcome.

I have nothing to say regarding fillers or closing machines. They are marvels of invention, engineering technique and automatic operation. Even the new vacuum pack closing machine seems to operate efficiently and it is ready to do its part when we know more about the possibilities of this idea and it is past the experimental stage. We want to leave something to talk about next year.

Retort and cooling tank operation are fairly well standardized and due to the perfection of automatic control devices are very seldom the cause of any serious trouble.

Warehousing: During the initial stages of developing this official grading service in 1928, it became very evident that there was great room for improvment in the methods of warehousing, piling, coding, identifications of lots, recording, etc. The great majority of complaints from buyers as to unsatisfactory delivery can be traced back to the mixing of lots in the warehouse, the drawing of samples that are not representative of the lots and the inability of the warehouse foreman to identify each lot when shipment is made.

There are several methods and systems that cover this problem which when placed in operation and followed consistently throughout the season will automatically eliminate a great many of the complaints that come up regarding "delivery not like samples" and "delivery not of uniform quality."

We have developed a complete outline of a warehousing system, covering every detail of piling, drawing samples, floor plan, record sheets, card index of all lots, code marks and record of official score and grade that we will gladly furnish upon request. May I say in passing that we have not had a single complaint this past season where this system has been in use.

Financing: Here is another delicate subject but one of more vital importance than many are willing to admit. It seems that whenever a local Commercial Club or Civic Improvement Association plan for an industry in their town, they think first of a canning factory. It is only recently that we have been able to quench a few of these "fires of local enthusiasm" and hold this part of community welfare programs in check.

In such projects where they finally come into operation, the local board of directors have invariably found it necessary to borrow large sums of money for operating expenses and have pledged their personal assets as security for these loans. This obligation has not been a difficult one to assume as long as conditions were favorable and the company was making money. However, when over-production slows up sales and distribution, these notes come due and must eventually be paid off by the sale of merchandise at whatever price it will bring. Results—declining prices, losses on carry-over stocks and disorderly marketing.

It has always seemed to me that financing under warehouse receipts, pledging the manufactured commodity itself for at least a part of the borrowings, would relieve this situation of forced liquidation and permit a more orderly marketing program.

Sales Procedure or When is a Broker Not a Broker and How Much? I would like to state plainly and sincerely at the beginning of this paragraph that I believe good, honest, reliable and conscientious brokers are a real asset to any canning company. They render a service that is necessary at minimum cost, and a service that very few, if any, companies can replace or develop out of their own personnel.

Selling is a profession in itself, requiring special training, ability and experience. Canning factory management is another profession entirely and I find very few instances where these two abilities are combined in one individual. The "nigger in this woodpile" is the "buyer's agent" who calls himself a "food broker," and who devotes his time, his energy and ability (?) to the interest of others rather than those who pay his salary. Case after case has come to my attention where it was very evident that the broker had told the canner one thing and the buyer another, where misunderstanding, serious loss and inconvenience had resulted from lack of a clear-cut understanding between buyer and seller regarding details of a transaction for which the broker was directly responsible.

Apologies, excuses and alibis will never correct this condition. The solution lies in any one of three methods of selling:

1. Take time to select only the best brokers to represent you in each market and insist that they work for your interest.

Give them 100 per cent co-operation and support and don't expect them to make a sale stick unless you have done your part on the delivery end.

2. Pool your sales efforts with other canners and employ the best sales manager you can find.

Give him a free hand to carry out your sales program and then be satisfied with results until experience proves it is time to employ some one else.

3. If your total production is large enough to warrant such action and you have not been able to obtain satisfactory brokerage representation, then you are justified in a program of direct selling through the efforts of the best salesman in your organization.

If one of these three methods fails to meet your requirements, you can write your own ticket.

Labels: A delicate and touchy subject, I know, but nevertheless an important one. We have 36 different kinds of peas, different as to variety and size, distributed under at least a thousand different labels. Each of these labels is striving for its place in the sun and in the struggle for preference and favor, presents nothing but a picture of confusion to the consumer.

Brand names based on the name of the town, the name of the company, some member of the family, a visionary phrase or slogan may mean something to the local community in which it

originates but it means absolutely nothing to the consumer in 95 per cent of the cases.

Furthermore, these labels in nearly every instance carry no information at all concerning the quality of the product inside the can. Neither does the same label or brand name always cover the same grade and quality. It is high time that pea canners in State groups or through mergers and consolidations take some definite action with a view to correcting this condition by the adoption of group labels that tell the truth about the contents of the can in simple language that can be easily understood and remembered by the consumer.

Protect these group labels by a rigid system of inspection and official grading, guarantee the quality of every can to be as represented, sell them under uniform sales contracts without special concessions as to discounts, special swell allowances, advertising allowances and the Lord knows what else; and then, and not until then will the pea canning industry move forward to its place in the sun. Not until then will this delicious food product increase in favor with the consumer. Not until then will we be justified in running this excess equipment to capacity. Not until then will these "Big Pods produce Big Peas."

CHAIRMAN GLASCOFF: From the address you have just listened to I know there must be some of you who would like some information on some of these points that have been brought out, and rather than to wait until the finish of our meeting and then try to have a discussion and go over some of the things we have heard, I believe it advisable to take this up now. I am sure there must be some questions on the points raised by Mr. Burr.

MR. DELAHOY: What blanching do you recommend?

MR. BURR: Perhaps I was just a trifle too point-blank in my statement regarding blanching. I recall a few years ago when Mr. Deneiger, of Beaver Dam, presented a paper at this Section meeting on blanching, and I have been observing details of that character very closely ever since. I can say simply this: that so far as making a specific recommendation or setting up a particular formula on time and temperature of any particular grade or size or quality of peas, that is not my intention at all; but I did find prevailing in the minds of a great many processors and blanching operators this idea that had been passed on by many managers or operators to the effect that these standards can go into the hoppers upstairs, then open up the valves and give them all they can stand. In other words, with no forethougnt or judgment imposed on the operations of that blancher, the result (as every man in this room knows) is a certain lot of peas go through those blanchers and they just cook the "tar" out of them—that is the only way I can express it.

There are certain limitations below which we may not go, and certain above which we may not go. The thing we want to put forward is: It should be brought more definitely before the man who knows what to do, the man on the job.

MR. DELAHOY: What about commercial fertilizer?

MR. BURR: Do you mean where to get it?

MR. DELAHOY: No, the analysis of it.

MR. BURR: What to recommend?

MR. DELAHOY: Yes.

MR. BURR: I had a conference here Monday morning with a group of canners discussing that particular problem, and this applied to a group of canners from the State of Wisconsin, who, evidently, came to this decision: that the use of a commercial fertilizer carrying no nitrogen, 20 per cent of available phosphoric acid and no potash is the most desirable mixture. They called it the 0-20-0. There is such a mixture in the market, I understand, but whether you buy that particular formula or not, it will give you some idea of the chemicals: low in nitrogen, high in phosphoric acid and low in potash.

MR. DELAHOY: Do you think inoculation is advisable?

MR. BURR: I think so, and I think I am expressing the minds of all our men who have used this inoculation for years when I say I believe there is a very appreciable quality in flavor that comes with using good inoculation. Bear in mind, however, there are just as many different varieties in inoculating material as there are varieties in seeds; some good and some not so good; some you can get results from and some you cannot find anything in the way of favorable results.

MR. MUSPACH (University of Wisconsin): I should like to ask the growers here if they have had any experience bearing out the use of fertilizers. Mr. Burr, as I understand it, made the statement that potash seemed to have the tendency to harden the peas. In our experience we have not been able to trace that through definitely. More often, on some of our soils, we find a fertilizer containing a certain amount rather low in nitrogen but rather high in potash, and up to 6 per cent in potash seems desirable. I should like to know the effect.

MR. BURR: I am glad you brought that point up, Mr. Muspach. I might say that when I started Woodbury to censoring this paper the other day that was the only thing he picked on; he thought possibly my statement was too strong in saying potash was not desirable.

I understand this matter of treating fields in certain localities is a matter of prescribing after you have found the condition. I am speaking now as a result of several years of experience with the use of commercial fertilizers in the eastern part of the country, but potash is generally thought of as being a fiber builder.

I did not say in this paper (if I may correct your quotation) that the use of potash has a tendency to toughen the skins of peas. I do not know that the general tendency in any line of plant growing is to build the stem, toughen the fiber and give the straw more strength, and I just feel there may be a possible relationship between that fact as we know it to be present on other crops and the corresponding degree of toughness or hardness on peas. Of course, you cannot put your finger on a specific

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result as I know of, but I do not feel we need worry very much about buying potash as a fertilizer for this crop. I do not think we need it.

MR. G. A. WRIGHT: Do you think it advisable to use the full amount of inoculation on soil which has grown peas, say a year or two before; that is, use the same amount of inoculation on soil that has grown peas as on new ground that has never grown peas?

MR. BURR: I refer that question to Dr. Whiting. I think he is in the room.

DR. WHITING: This question that Mr. Wright has raised will depend on a good many different conditions. If the soil has been dry and sour, bacteria will die off very rapidly. Even though you may have inoculated the crop this year, next year it will not be in as good condition for doing good work as a fresh lot. If, however, it is a good lime soil, it is a question of whether you would get an increase and uniformity in yield that would justify it.

If you are going to classify your fields as you know each field as an individual plot, you can inoculate accordingly.

There is just one other phase of this question: We all know that some soil has the ability to take more nitrogen out of the air than others. We are getting a decided increase on land that already has bacteria by confining to seed. That is because we have a bacteria developed naturally in that soil by modern scientific methods.

CHAIRMAN CLASCOFF: It may seem to some of you that we are taking up more time than we should, but it seems to me discussion on a lot of these items is really of importance to all of us, and questions asked and answered should be worth something to all of us. Have any of you any other questions on the points brought out in Mr. Burr's paper?

I should like to say just one word on one point he covered; that is, the matter of enamel-lined tins. He made reference to some little trouble encountered. We used enamel-lined tins on our entire pack of several million cans, and we experienced no

difficulty either from the cans or any phase connected with the enamel-lined tin.

The enamel-lined tin in itself is not such a radical change from the can we have all been using. If there were no differnece whatever from the finished pack, the housewife is the one to whom we are all catering, and it is she who is the last judge of your product. When you get away from the technicalities of packing, selling and buying and merchandising, when she empties a can of peas into a pan, she invariably looks into the can, and no matter whose peas you are using, the inside of the plain can is not particularly attractive to the housewife. The inside of the enamel-lined tin is clean and wholesome, and we believe it is a step in the right direction to use that type of tin, even though it represents a slight increase in cost. We believe it more than offsets the cost.

I should like to ask Mr. Burr (if it is a fair question) just what his allusion was to any trouble encountered in this tin. We all know there is always more or less missionary work to be done in changing from one type of container to another, and I do not believe it out of order to bring up such a question, and I believe it is a vital question.

MR. BURR: This reference of mine was based (as I recall it) on six complaints that were called to my attention, as a result of using the enamel-lined tin. A leakage had developed on the side seam, resulting in a bursting open of the can on the side seam, or a leakage had developed in the top of the can where the flange is turned around in the closing machine process. Two can companies were involved, and I think both companies will sustain me in this point: that, due to the fact that the soldering fluid used on the side seams is not so effective in the presence of that layer of enamel, when the soldering process is taking place in manufacturing the tin, and, furthermore, this little layer of enamel on the flange of the can in being crimped and turned under the closing process has a tendency to sort of loosen that seam at that point where the side seam joints the top seam, resulting in just a little leakage there. It is hardly ever evident, and probably not discovered until you come to label the lots. You will find cans that do not swell, which we did, with no other indication of anything being wrong until they were turned up in running through the labeling machine; a little leakage was there.

I have taken this matter up with both canning companies, and they have satisfied me they are going to be able to eliminate that in a standard can. The situation is not serious.

CHAIRMAN GLASCOFF: Just how serious were any of these particular cases? Was there much of a loss involved?

MR. BURR: No, the loss in any one instance was not alarming at all.

CHAIRMAN GLASCOFF: Are there any other questions? It would seem in the various points covered by Mr. Burr some of you might wish some additional information at this time. If so, we should be glad to have you bring it up. If there are no further questions on the paper just presented, we have Mr. Cameron, of the Research Laboratory of the National Canners Association, with us, and he is going to speak on "Control of Blancher Contamination." Mr. Cameron.

Control of Blancher Contamination

By E. J. Cameron

Research Laboratory, National Canners Association

At previous sectional and national meetings and in various of our publications, we have stated that in the canning of peas we regard the brine and blancher systems as the outstanding sources of resistant bacterial contamination which may lead to spoilage. We have further stated that according to information we have gained during the past three years, resistant contamination brought in with the raw product is entirely secondary in importance to that which develops within the cannery proper. We still regard brine infection, when it results from the establishment of infection in wooden brine tanks, to be most serious, but fortunately this is relatively rare.

In contrast to the rare incidence of brine tank infection, we find blancher infection to be almost the rule and not the exception. In spite of this generality, however, we have certain safeguards which are inherent in blanching procedure, and which act in a protective way. In the first place, where the blancher water is infected with flat sour bacteria or other types of contamination, a good deal of this contamination is washed out through the overflow, and in any event the peas pick up only a small part of the infection present in the blancher. Secondly, after blanching, the peas are washed and this washing, depending upon its thoroughness, removes a substantial part of any infection picked up within the blancher. Where we have brine infection, it is quite obvious that whatever is in the brine, whether it comes from the sugar directly or from the brine tank, all goes into the can where it must be taken care of by the process.

In 1928, during our field survey, we examined samples from 80 pea canneries in Wisconsin. Sixty-five per cent of these showed some degree of blancher infection of the bacterial types associated with spoilage. During the past season we examined samples from 65 pea canneries in the Tri-States section and in New York State. Seventy-four per cent of these factories had one or more infected blanchers. This is ample evidence that blancher infection is frequent and geographically widespread. In 1928 we made cultures of a number of flat sour bacteria isolated from various contaminated blanchers. We did this to find whether these were in reality typical flat sour organisms, and particularly we wanted to find whether they formed spores of high resistance to heat. All of them conformed to our tests for flat sour bacteria. The resistance figures showed considerable variation, and we found high and low resistances for the same and for different factories.

Of thirty strains on which resistance tests were made, 9 were killed in less than 5 minutes at 240 degrees F., and from the standpoint of resistance, these were considered of very minor importance. Four strains had a resistance of between 5 and 15 minutes at 240 degrees F. These also were considered of minor importance. Seventeen strains showed resistances of between 20 and 50 minutes at 240 degrees F. It is considered that these, depending somewhat upon the numbers in which they entered the can, would represent something of a spoliage hazard. Thus, 57 per cent of the blancher cultures which we tested were of sufficient resistance to require a heavy process for their destruction.

Our basis premise, which we consider established, is that blancher infection is widespread and it may be of such a resistance as to lead to spoilage if uncontrolled. Now the question is how we may exercise the necessary control.

We have no practicable means of killing spores of spoilage organisms in the blancher. We are limited in any attempt at chemical treatment by the fact that whatever could be used would have to be non-poisonous and non-corrosive to the metals with which it would come in contact. We have done some experimental work with chlorine, but the results have not been satisfactory. At present we feel that it would be impracticable to depend on chlorine or hypochlorites in a canning factory; first, because in all except high concentrations it has very little effect on the flat sour bacteria; second, because the chlorine must be in a free state and it combines very quickly with organic matter such as would be found in the blancher or other equipment, and the canner would have to perform certain chemical tests in order to be sure that he had the desired amount of free chlorine; and third, because chlorine will react with the metals commonly used in canning equipment. Treatment with the usual types of alkaline detergents seems to have very little direct effect on the spores of spoilage bacteria, and any beneficial results from these would have to come through a general cleansing effect. The expedient of boiling with or without the addition of alkaline cleansing agents is, in our experience, inefficient when it comes to killing the spores some of which will resist boiling in water for as long as 70 or 80 hours.

Since we have for the present no advice as to a chemical treatment which will dispose of spores of spoilage bacteria by killing them, we have to rely upon measures which will prevent their development. It must be recalled in this connection that any spoilage bacteria, which would be found in blanchers or other equipment used for handling heated materials, would be of the class of thermophiles. These bacteria grow best at temperatures of about 130 degrees F. and some of them even require temperatures well above 100 degrees F. before they will grow. As the temperature is lowered, growth becomes slower and slower and finally ceases. At from 70 to 80 degrees F. we are safe in saying that growth would be entirely stopped or would be so slow as to merit no consideration. This gives us our first hint as to a control procedure. On this basis, we have suggested generally that, at night after the day's pack, the blancher be emptied and completely cooled with fresh cold water. This cooling should be complete in all parts of the blancher. We further suggest that in the morning, before starting the next day's pack, the blancher be thoroughly flushed out before beginning canning for that day.

As a supplement to prevent or inhibiting thermophilic growth by cooling, we have lately in an experimental way made use of a dye known as gentian violet. It has been found in our laboratory that this dye will restrain the growth of flat sour bacteria when present in extremely small amounts. A concentration in the proportion of 1 part dye to 1,000,000 parts of water is usually sufficient for this purpose. The dye is entirely non-poisonous and has no appreciable corrosive effect on metals. Unfortunately, it has no killing effect on the bacteria but only

restrains development of their spores. Our results were to the effect that over-night development of thermophilic bacteria can be restrained through the use of this dye, but there is a question as to whether this is more efficient than thorough cooling of the blancher at night. Between now and next season we hope to experiment further with gentian violet and attempt to combine this with other factors to permanently restrain spore development.

The washing operation which follows blanching is of great importance as a safeguard against the results of blancher contamination. It quite often appears, however, that this wash is deliberately or inadvertently neglected. Some canners wish to limit the wash at this point in order to prevent undue cooling of the peas. Others mean to wash the peas completely, but use a large washer and very little water. It is our opinion that every pea canner should aim to give as complete a wash as possible at this point.

Some canners use a hot water wash after the blancher in order to obtain a maximum closing temperature. There is no objection to this providing that fresh water is used, and providing that it is conducted to the washer through an independent system. The type of washer at this point is also important when a hot water wash is given. Unless it is accessible for cleaning in all parts, contamination may develop in the washer in the same way that it does in the blancher.

There may be some canners present who pack spinach. It has lately been impressed upon us that the significance of blancher contamination extends to this product. As a result of some work done last season, we consider blanchers of the type used for peas to be entirely unadapted to blanching spinach. We have traced one outbreak of flat sour spoilage in spinach to this source. It should be quite obvious, where a blancher is infected and spinach is blanched in it, that a substantial degree of contamination is carried into the can. After blanching spinach, it cannot be washed in any manner worthy of the name without being torn to pieces. It is our information that for the most part spinach is blanched on chain conveyors through steam boxes or through hot water. Such methods are preferable to blanching in a revolving blancher. Where the steam blanch is used, the spinach does not come in contact with any contaminated environment, assuming that the conveyor is clean, and where it is conveyed through hot water, the equipment is of such exposed construction that it can usually be readily cleaned.

CHAIRMAN GLASCOFF: Have any of you any questions you wish to ask Mr. Cameron?

Our next address is "Protection Against Unfounded Damage Claims," by Mr. H. M. Loomis, Assistant Secretary of the National Canners Association, Washington, D. C. Mr. Loomis.

Protection Against Unjustified Damage Claims

By Henry M. Loomis, *Assistant Secretary*
National Canners Association

TWENTY years ago the National Canners Association undertook the investigation of complaints of illness or injury attributed to canned foods. Up to December 31st, 1929, 2,966 such investigations have been made and it seems that a report of this work, covering the past ten years, would be of interest to canners and food distributors.

The plan and organization of this branch of Association work will first be briefly described. Upon receiving reports of illness or injury attributed to canned foods, if the outbreak appears to be one involving serious illness or injury, the Association arranges to have it investigated by an investigator trained in medicine. Through the Department of Bacteriology and Hygiene of Chicago University, arrangements have been made with such investigators in Chicago, New York City and Boston to cover complaints reported in the Eastern and Central part of the country. By similar arrangement with the Hooper Foundation for Medical Research, University of California, illness cases are investigated in the West and Southwest, while the branch office of the Association in Seattle handles investigations in the Northwest.

For complaints which are not of a serious nature, the Association employs experienced investigators, who are instructed to get at the essential facts. Questionnaire forms have been prepared covering the most important information desired, and these have been found very helpful. The investigator makes his individual report and a statement of his conclusions after the work has been completed.

In addition to the advice and assistance of its general counsel in the handling of these complaints, the Association also has arranged with local counsel in those cities from which most of the complaints are received.

As a result of the research work started in 1917 and still being carried on or financed by the National Canners Association, we have assurance that commercially canned foods are safe foods and that there is no connection whatever between so-called 'ptomaine poisoning" and canned foods. In fact "ptomaine poisoning" is recognized as a minnomer and the term is being discarded by medical authorities.

SUMMARY OF INVESTIGATIONS

During the 10-year period, July 1st, 1919, to July 1st, 1929, 1,955 cases were investigated by the Association. A list of canned food products involved in these cases shows that canned vegetables constituted 56 per cent of the complaints in the first six months of 1929 as compared with 46 per cent in 1928.

These complaints are mostly concentrated in a few localities, and in proportion to its population, Boston is far ahead of all other cities in the number of complaints received. Laws and court decisions in that State appear to be particularly favorable to the plaintiff and liberal settlements made in the past have encouraged the making of damage claims, not alone against food manufacturers and distributors, but against manufacturers of other products, railroad companies and public utilities.

An investigation of so-called "ambulance chasing" by the courts of New York City in 1928 showed the extent to which this business of threatening damage suits has developed in recent years. The combined claims from New York and Boston far exceed the total claims from all other parts of the country. The Association has endeavored to meet this situation as effectively as possible by employing special counsel and medical experts in both of those cities, and by recommending that canners and distributors refuse to make any case settlement of claims that are apparently unfounded. While the number of claims has continued to increase, there has not been a corresponding increase in the number of court cases, and we hope in time to convince seekers for "easy money" that it is not profitable for them to choose members of the National Canners Association as their victims.

The relative number of illness complaints has declined in the later years and is far exceeded by claims that foreign substances were found in canned foods. In the latter cases, illness is not usually claimed, but injury to the mouth, throat or teeth, or nervous shock or disgust due to the discovery. As the supporting testimony of a physician is not usually necessary in foreign substance cases, and there are ordinarily no witnesses present except members of the family or friends, the increase in that type of damage claims is readily explained. From the tabulated figures it appears that foreign substance cases now constitute about 60 per cent of the complaints investigated, as compared with 10 per cent in 1920. It, therefore, behooves all canners to use every reasonable precaution to prevent foreign substances from finding their way into cans and to be in a position to prove that such complaints are not due to any negligence on their part.

The merits of the various complaints investigated, so far as they could be determined from the investigations made or from evidence brought out later, are revealed when the cases are tabulated. Where there was no evidence to support the claim, but apparently no ulterior motive in making it, such claims have been classified as "apparently bona fide, but unfounded." To that class belong 821 of the cases investigated, or 42 per cent for the 10-year period. The cases classed as "inconclusive" are, unfortunately, numerous, since even in complaints of illness are reported for investigation within twenty-four to forty-eight hours (which is rarely the case), it is usually impossible to secure samples of the foods eaten at the suspected meal for laboratory examination. Even if secured, the condition of the samples is generally such that they are practically of no value.

The final outcome of the 1,955 complaints investigated during the past ten years, so far as such information is available, shows that no direct demand for damages was made before or since the conclusion of the investigation in 733, or 37.5 per cent, of the cases; these are mostly cases investigated as the result of newspaper reports. Claims for damages or compensation were apparently dropped in 688, or 35.2 per cent, of the cases, and the final outcome of 5.7 per cent is unknown. Suits are still pending in 62 cases, or 2.5 per cent; trials were held in 36 cases, or 1.8 per cent, with dismissal or a verdict in favor of the de-

fendant in all but one of the cases which the Association defended. That trial resulted in a nominal verdict of $50 for the claimant. Twenty-nine cases have been settled on advice of the Association counsel, 124 have been settled at the request of the canner, 24 by the grocer or jobber, and 5 by the grocer's insurance company, making a total of 184, or 9.5 per cent, of the cases settled.

This service has become increasingly important from year to year. It makes a strong appeal to canners and distributors, particularly to those who have had troubles with claims of this kind. Complete service in the investigation of such complaints and the defense of unjustified claims is provided by the Association to its members without charge.

The Board of Directors of this Association has ruled that the Association should not undertake to handle complaints of this kind which have occurred prior to a canner's application for membership. The expense of this service is considerable, and it would be unfair to its regular membership for the Association to do this.

Either the demand for this branch of Association service is better known and increasingly utilized, or the number of complaints of this kind is on the increase. This is shown by the fact that 466 complaints were investigated during 1923, as compared with the 348 in 1228, and 306 in 1927.

A system of coding should be used by all canners to enable them to identify their cans of foods and preferably the date of packing. Certainly no canner wants to assume responsibility in connection with a complaint of this kind unless he feels sure that it is his own product that is involved. This would often be impossible were it not for the use of code marks. It is clear that if there is any trouble of this kind with a canner's product, he should be able, as far as possible, to trace the date and place of packing, particularly when he operates more than one plant.

From past experience, it seems that vigorous defense against fraudulent claims, discouragement of claims which, though they be honestly made, have no foundation in fact by refusing to make any offer of financial compensation, and the prompt settlement of well-founded claims, constitutes the best policy for the industry. It has the approval of the Association's general and local counsel and should continue to govern the Association in the handling of these complaints. No action should be taken to settle or adjust a claim without a thorough investigation. Such settlements simply tend to encourage fraud.

TABLE I—NATURE OF CONSUMER COMPLAINTS

1919-1929

	Claim food caused illness	Complaint of illness due to for'n subst'e in food	Complaint of for'n subst'e in food, but not illness	Total
1919 (last 6 months)	13	0	0	13
1920	51	2	4	57
1921	69	1	6	76
1922	115	6	8	129
1923	123	10	15	148
1924	129	10	28	167
1925	129	14	35	178
1926	149	28	56	233
1927	135	30	130	295
1928	138	38	165	341
1929 (first 6 months)	100	32	122	234
Grand Total	1,251	171	569	1,891

TABLE II—MERIT OF COMPLAINTS INVOLVING COMMERCIALLY CANNED FOODS

1919-1929

	Number
Apparently well-founded complaints	332
Apparently bona fide, but unfounded	821
Exaggerated or fraudulent	308
No illness or injury	62
Inconclusive	356
Total	1,879
Not commercially canned foods	60

TABLE III—OUTCOME OF CONSUMER COMPLAINTS INVESTIGATED BY THE NATIONAL CANNERS ASSOCIATION

July 1, 1919, to July 1, 1929

	Number of Cases	
No Settlement:		
Commercially Canned Foods Involved		
Compensation not demanded	733	
Claims apparently dropped	688	
Threatening suit	13	
No record of outcome	111	
		1,545
Foods Not Commercially Canned		
Home-canned products	54	
Canned foods not involved	88	
		142
Total		1,687
Claims Settled:		
Settled on recommendation of Association Counsel		29
Settled by, or at request of canner, grocer, or insurance company		153
Settled by request of judge		1
Total		184
Claims in Suit:		
Suits Dismissed		13
Verdict for defendant		19
Verdict for claimant*		4
Suits pending		49
Total		84
Grand Total		1,955
Outcome of Cases Involving Commercially Canned Foods:		
Percentage of cases settled	9.5	
Percentage of cases actually brought into court	1.8	
Per cent of court cases favorable to defendant	88.0	

*Note—The defense of three of these cases was not in the hands of the National Canners Association.

CHAIRMAN GLASCOFF: Has anyone any questions he would like to ask Mr. Loomis?

It is a pleasure to note we have with us some mighty good looking uniforms, which I take it are from the Quartermaster's Division. These gentlemen are certainly more than welcome at our meetings, and I wonder if there are any questions you gentlemen would care to ask at this time?

REPRESENTATIVE FROM QUARTERMASTER'S DIVISION: Thank you, Mr. Chairman, I do not believe we have any questions at this time. You might be interested in the fact that we are now maintaining a subsistence school at the Quartermaster's Corps.

CHAIRMAN GLASCOFF: We will have the report of the Nominating Committee.

THE ELECTION

MR. KRAEMER: The Nominating Committee presents the following report: Mr. F. A. Ethridge, Jr., of Rome, N. Y., chairman, and Mr. W. B. Stokeley, of Louisville, Ky., secretary.

CHAIRMAN GLASCOFF: Gentlemen, you have heard the report of the Nominating Committee. May we have a second to the acceptance of that report?

The report was seconded, was put to a vote and carried unanimously.

CHAIRMAN GLASCOFF: Is Mr. Stokeley in the room? (Not present.)

It is with pleasure that we greet Mr. Ethridge as our chairman for the coming year, and the meeting will now be turned over to Mr. Ethridge.

CHAIRMAN ETHRIDGE: If there is no further business to come before the meeting, a motion to adjourn is in order.

Upon motion regularly made and carried the meeting adjourned at 11.50 o'clock.

Baked Bean Section

Wednesday Morning, January 22, 1930, 9:30 A. M.

Frank H. Raymond, Fremont, Michigan, presiding.

THE meeting of the Baked Bean Section of the National Canners Association, convened at nine-fifty o'clock, Mr. Frank H. Raymond, Fremont, Michigan, presiding.

CHAIRMAN RAYMOND: It is customary to appoint the Nominating Committee first, but I am going to wait just a little while, and then I have an announcement which I believe I will hold up until more are here.

We have quite a lengthy program this morning, so I think we will just start right off and I will not take the time to make any Chairman's report.

I am going to call on Mr. K. P. Kimball, of Lansing, Michigan, and he will talk to you on, "World-Wide and Domestic Sources of Beans Suitable for Canning as Baked Beans." Mr. Kimball.

World-Wide and Domestic Sources of Beans Suitable for Canning as Baked Beans

By K. P. Kimball
Lansing, Mich.

I COULD give you a lot of dry bean statistics, but take it you canners want some information connecting these statistics with their relative commercial value as applied to the canning industry, so I've restricted my talk to only such varieties of beans as the canners use—their source of supply and the market factors which affect them.

WHITE BEANS—

The following varieties were canned this year, named in order as to quantity.

A. Michigan Pea Beans, and under this heading we include those grown in New York State, Wisconsin and Ontario, Canada—all of the same variety.

B. European Pea Beans, from Hungary, Roumania, Austria, and France.

C. Japanese Kotenashi and Ohtenashi types, grown in Japan, Manchuria and Korea.

D. California Small Whites, the New England canners are about the only canners using this variety.

Manifestly, it does not take a bean expert to realize that if European beans are available and cheaper the canners will turn to the cheaper variety to the economic disadvantage of the higher priced article. For that reason I list in the same order herewith the statistical situation in those varieties, that is, the last crop as compared with the 1928 crop using the 40,000 pound car as a unit.

A. Michigan pea beans, 75 cars more than last year.

B. European pea beans, 620 more cars imported to date than last year.

C. Japanese Kotenashi and Ohtenashi, 265 more cars imported to date than last year.

D. California small white, 85 cars less than last year.

In other words from a canning standpoint, we had 875 carloads more than last year to care for this year's canning requirements of the White bean type.

A word about this year's imports. Past records show that our heaviest imports usually come after January first, for the reason that buying orders do not normally go out until a crop shortage is apparent. This year on account of the clean-up in domestic beans, the high prices, and also fear that late imports would be caught by the tariff—our heavy imports came in November and December—today there are practically no white beans obtainable from Europe and after present Orientals afloat arrive, there will be no additional large quantity available. Europe is now a buyer of Japanese beans.

RED KIDNEYS—

Both light and dark are largely used by the canner. Light Reds are raised in New York State, Michigan, California and Idaho. Dark Reds are raised commercially in Michigan only.

The Red Kidney crop of the United States shows a shortage of approximately 160 cars this year, compared with last year, the heaviest shortage being in Dark Reds, which on account of drouth were less than half a crop, with the result that they are bringing a premium of $3.00 per bag.

There are many substitutions used by the canner for high priced Red Kidneys, such as California Pinks, Colorado Pintos, and Mexican Reds. These are canned as "Red Beans," with the word "Kidney" eliminated and in addition the Japanese Nagauzura, which is a deliciously flavored Kidney Bean, but the Government insists the word Nagauzura be placed on the label, and this restricts the sale as the average consumer is skeptical of that Japanese word.

CHILI CON CARNE—

The canners of Chili use Pinks, Mexican Reds, Pintos and Chili Bayou beans. They are fortunate this year in having a big surplus of Pintos, about 1,900 cars over last year, and as any of the above varieties can be used successfully, they are buying their requirements at the cheapest price in many years.

Another factor must be considered. While from a canner's standpoint the price of Pinto beans will in no way influence his purchase of white beans, it must be borne in mind that when one variety, on account of surplus crop is much cheaper than the average, there is a certain amount of substitution by the home cooking element, with a consequent release of white beans which are available for canning. The same factor applies to the great Northern White bean which, on account of its thin skin and irregular size, is not so acceptable to the canner. When this variety is cheaper than Michigans the wholesale grocer trade turn to it and more pea beans are made available for the canner.

We have available for distribution a complete statistical report of all beans up to January 1st, prepared by our Mr. Day. If you use statistics in planning your business you will find these accurate and dependable.

I would like at this time to bring one subject before the canners and that is on advertising. Since we have been packaging dry beans, with the idea of building up a consumer demand for a branded article of better quality, I have been delving into the advertising value of beans, and it seems as though all of you have been missing a good bet.

First, I want to say we don't want to be a competitor of the canner. As one analyzes the bean consuming market, he realizes that as people congregate in cities with small apartments and even in modern homes, the kitchen and toy stove keeps getting smaller and smaller with less exercise, and the already and thoroughly cooked bean in cans will continue to grow in favor. So any advertising that shows up the advantages of beans as a food will help all of us, and in trying to contact the home cooker with our packages we will undoubtedly in many cases give the housewife a desire for beans that will be filled with a can of your pack. But to get back to advertising, if one reads your pages and half pages of color and picture, one reads of the "tang" of a new tomato sauce in one brand the "oven-baked" flavor of another, and the sniff of "wood smoke" in another; the words "delicious and tasty," and appetizing pictures, but nothing about the bean itself. Elsewhere in the same magazine you are asked if you have had your "iron this morning" from a raisin advertisement. Did you know that beans contained more "iron" than the raisin, also more calcium, phosphates and protein to build bone and muscle in growing children than most any other food, yet you let the breakfast food men walk off with that selling point.

In a survey among homes in Toledo and Detroit, we found many housewives who reported that they and their children liked beans, but beans were too hearty a food for tender stomachs, someone should tell them that the kiddies' tummies or bodies either wouldn't be tender if they ate more beans. From the old army dietitian all down the line beans are the fuel that produces vim, vigor and vitality. We have a chart here that shows some of the comparative differences between beans and other foods. I think we all ought to sell them to the consumer and instead of a national bean week, we ought to establish Saturday as a universal bean day. I know we can all put it over and then neither you nor we need ever worry about sales quotas or competition.

MR. K. P. KIMBALL: If there are any questions, I should be glad to answer them.

Our office called the Department of Commerce this morning, and they gave us the imports up to the first of January, from

which I compiled the quantity of cars that have come in. December imports were 17,492,000 pounds, or approximately 440 cars, which brings our total imports this year up to about 1,400 cars of beans. Of course, you realize these include other varieties than beans used for canning, but it gives a comparative idea with what was brought in a year ago.

As far as we can estimate now, there are afloat from Japan about 150,000 bags, or about 400 car-loads will cover all of it. When that lot now afloat is in, the percentage that is back that will be offered to the United States will not be very large.

I think that is all I have to say, gentlemen, unless you have some other points to bring up. (Applause.)

CHAIRMAN RAYMOND: I wish to thank you, Mr. Kimball, for helping us out this morning.

We shall call on Mr. Greenleaf, of the Research Laboratory, National Canners Association, Washington, D. C., who will talk to us about "Varieties of Beans for Baked Beans."

Varieties of Beans for Baked Beans

By C. A. Greenleaf

Research Laboratory, National Canners Association

At the meeting of the Program Committee, it was suggested that the Baked Bean Section would be interested in a comparison of a number of varieties of beans canned under identical conditions.

Acting on this suggestion, we have canned several varieties of beans, both in plain sauce and in tomato sauce. We were able to secure the Great Northern, Jean Type, Machigan Pea (two lots) and California Pea varieties. We had hoped also to include Japanese Ohtenashis and Korean Kotenashis, but were unable to locate a source of supply for either of these varieties.

In certain respects the conditions were not identical for all varieties. In the first place, the beans which we were able to obtain were not all of comparable quality. Moreover, they did not respond in the same way to the same conditions of soaking, blanching and fill of can. It was not clear, in one case at least, how much of the difficulty in securing proper swelling was inherent in the variety of bean and how much was due to the quality of the particular lot. By making a few preliminary packs in each case to determine the proper fill, it was possible to secure a fairly uniform consistency. It may be, however, that the comparison will not do complete justice to each variety, since, as stated above, the raw beans were not of uniform quality, and the methods used may not have been such as to show the best possibilities of each variety.

The plain sauce used was made after the formula given in National Canners Association Bulletin No. 15-L, Revised, p. 4:

Molasses	5 gal.
Sugar	25 lbs.
Salt	20 lbs.
Starch	7 lbs.
Water to make	100 gal.

The tomato sauce was made after the following formula:

Catsup	40 gal.
Salt	13 lbs.
Starch	7 lbs.
Water to make	100 gal.

With exception of the Great Northerns, all samples were soaked approximately 15 hours, blanched six minutes in boiling water, and filled at once into 303 x 400 cans. Boiling hot sauce was added to a total fill of 17½ ounces and the cans were closed without exhaust. In plain sauce a cook of 90 minutes at 240 defrees F. was used, and in tomato sauce, 70 minutes at 240 degrees F.

The Great Northerns did not soak at all uniformly. In plain sauce, the swelling seemed to complete itself during the process, but in tomato sauce, it was not found possible to secure proper swelling without a short blanch preliminary to soaking. In this one case, therefore, a preliminary blanch of 3 minutes in boiling water was given. The raw beans were of poor quality, not uniform in size and contained many shriveled, discolored and moldy beans, requiring much sorting. It is not possible to say from this experience whether the variety of bean or the quality of the sample was responsible for the trouble in getting the proper swelling.

To a lesser extent, the Jean Type beans failed to swell uniformly during soaking and blanching. The process seemed to complete the swelling, although it is possible that here, too, a preliminary blanch would have been advisable.

Samples of the packs we have put up will be cut at the close of this meeting in order that those who are interested may have an opportunity to compare them.

MR. C. A. GREENLEAF: We did not arrive at any conclusion regarding the relative suitability of these beans for canning purposes. That was not contemplated in our work. It would not have been just to make any conclusions based on only one sample of beans. The intent of our work was to give you people an opportunity to look at them and form your own conclusions.

The Michigan beans soaked very uniformly. The California beans soaked uniformly, too. (Applause.)

CHAIRMAN RAYMOND: It is impossible, I think, to make the texture even through the can without breaking down a certain per cent of the beans in processing. If you want the beans left whole in the can you are going to have some hard beans that are not going to be cooked up enough. If you cook those enough, you are going to have some others cooked too much.

I wish to thank Mr. Greenleaf for appearing this morning.

I wish at this time to appoint the Nominating Committee.

I have chosen Mr. Harry McDonald as Chairman of the Committee, and Mr. Nockman and Mr. T. C. Wilson to act with him.

On account of serious illness in his family, Dr. W. C. Geagley, State Analyst, Michigan Department of Agriculture, Lansing, Michigan, is not able to be here. I think his father-in-law is ill. I have asked Chester Ray to read his paper. He mailed it to me, and it arrived in time for the meeting. The paper is entitled "Tolerance in Bean Grades."

Tolerance in Bean Grades

By W. C. Geagley

Michigan Department of Agriculture, Lansing, Mich.

The development of agriculture has admittedly been a process of evolution, leading to a more highly specialized production of farm products and thereby contributing one of the greatest economic factors that we have to contend with today in dealing with the largest, most universal business of the age, that of supplying food to the inhabitants of this earth.

Competitive, specialized, in tensified production inevitably led to changed trade practices from the old established order and improvement, changes, standardization and the establishment of grades occurred largely as the results of economic necessity. This feature of the agrcultural industry will grow and develop to a point we can scarcely appreciate at this time and will eventually prove to be one of the greatest stabilizing forces in agriculture just as it has been in every successful industry. I scarcely need point out the steel industry, the boot and shoe industry, the automobile industry, textile, rubber, builders' supplies, farm machinery and the many others that mark their progress in direct ratio to the application of standards, grades and the elimination of waste.

The application of standards and grades in an industry, to be successful, must be of mutual benefit, that is, the consumer or purchaser must derive value, either in the form of a lessened cost or in a better article at the same price, and the producer or manufacturer obtain higher quality raw material that will enable him to produce a greater volume at less cost. Unless this spirit of cooperative endeavor prevails grading of commodities is like the "house built upon the sands."

We are interested today, primarily, in bean grades and before becoming involved too deeply it may not come amiss to pause long enough to briefly inquire as to some of the underlying principles in the establishment of grades, or standards, or whatever term you wish to use.

We have, of course, to deal with a raw product that somewhat differs from the finished article which is consumed, nevertheless the guiding considerations in preparing standards, grades or definitions should be the same.

Definitions are so framed as to exclude from the articles defined substances or products not included in the definitions.

A term once defined in any schedule has the same meaning wherever used.

The names of food or agricultural products defined should agree, so far as possible, with the existing American trade usage as known to the producer or consumer.

The grades or standards are such that a departure of the articles to which they apply above the maximum or below the minimum limit prescribed is evidence that such articles are of inferior or abnormal quality.

The limits fixed as grades or standards are not necessarily the extremes authentically recorded for the article in question, because such extremes are commonly due to abnormal conditions of production and are usually accompanied by marks of inferiority or abnormality readily perceivable by the producer or manufacturer.

Having in mind such fundamentals as just outlined it is readily apparent that bean grades may be considered from at least two distinct angles, that is, the raw product marketed and the finished product packed in cans for the consumer.

When confronted with the adoption of a uniform grade for such a product as beans, immediately there is projected into consideration a number of variable factors, over which man has no control that offer at once problems and obstacles that seem unsurmountable, therefore the general advantage of uniform grades become readily apparent.

Broadly considered, the purpose in establishing standards or grades is to facilitate all of the marketing processes. Farm products may pass through many hands in moving from the centers of production to the wholesale markets. Many times products are contracted for to be delivered in the future and a large part of the business is transacted at long range. It is essential that there be a common designation to insure complete and mutual understanding between buyer and seller. But it is neither necessary nor desirable, usually, in commercial transactions, to require in minute detail specifications as to each factor influencing market quality.

A general grouping of the product into grades of the same range of value or utility is, as a rule, sufficient. We are cognizant of the fact that certain manufacturers of raw agricultural products require a personal inspection by their representative, which accounts for a large volume of trading on the basis of samples in such products as cotton and tobacco.

The advantage of standardization, in establishing a common language of terms, and actually separating the product into different grades of market quality is obvious if we expect an intelligent comparison of market prices, business methods to prevail from producer to consumer, and the elimination of waste, both economic and physical.

Separation of the product into grades permits more effective distribution and finding the market which will give the grower the largest return.

The grade or quality of beans depends upon their wholesomeness for food and their relative commercial value as evidenced by their general appearance and degree of freedom from moisture and such defects as split beans, damaged beans, foreign material of any nature and mixture of other kinds or classes of beans.

As a factor of quality in beans, the general appearance must be considered as to good natural color, plumpness, uniformity of size, and checked skins. The color is affected by weather conditions, age, disease and other causes. Only when a lot of beans contains a sufficiently large percentage of such off-colored or slightly stained beans to affect its appearance seriously in this factor considered. Absolute uniformity in size is neither necessary nor practicable. The presence of shriveled, undersized and immature or undeveloped beans gives an uneven appearance to a sample and indicates that it has not been submitted to ordinary cleaning and screening operations.

The percentage of moisture contained in beans must necessarily be kept within certain limits to permit storing them without danger of deterioration. It is not a serious factor when the beans are well matured and harvested under favorable conditions but when conditions are conducive to excessive moisture heavy losses from heat, mold and other damage will result unless unusually good care is taken in storing.

In itself a split bean may be wholesome food but when mixed with sound whole beans it destroys their uniform appearance and cooking qualities. It is also more susceptible to damage and deterioration than a whole bean.

There are various types of damage in beans, chief among which are weather, frost, disease, insects, and a combination of two or more of these types. The importance of damage as a grade factor is emphasized by its relatively greater effect on quality and the difficulty attending its removal from a given lot of beans.

As a grade factor, foreign material may be considered more objectionable than any other because of its nature. However, in most cases it is easily removed by present day cleaning machinery and for this reason it is practical to keep the percentage allowance in the respective grades within very narrow limits.

From the foregoing it is apparent that the separation of a raw product, like beans, into different grades is based upon the interpretation of terms and descriptions by individuals and the personal element no doubt plays no small part in the incorrect designation.

The question naturally arises, "what tolerance or variation, from the established conditions set forth in the grades should be permitted in the grading of any given lot of beans?"

To answer a question of this kind correctly it seems advisable to have in mind the fundamentals for the establishment of grades. If grades or standards are based on average conditions met with in production, and the trade, consideration of a tolerance has been given and taken into account in the establishing of the grades.

Because standards are invariably based on minimum requirements, little, if any, tolerance should be allowed; that is, a greater variation than is set forth in the standards would automatically reduce the grade to the next lower grade or class.

However, it is conceivable that grades could be established, based on an ideal condition rather than on a practical basis and in such cases sufficient leeway should be allowed, or a tolerance established, which would permit of the acceptance of beans which differ, within reasonable limits due to natural causes, from the ideal condition.

One of the most puzzling market conditions confronting an industry is a multiplicity of grades that govern, or the use of terms which permit of wide interpretation. This leads continually to controversy and misunderstanding.

CHARLES G. SUMMERS, Jr., President
Pennsylvania Canners Association

There should be, for the good of any industry, only one source for the establishment of grades. If production or marketing conditions will permit of the establishment of grades that will govern all localities, then proper education from the producer to the ultimate consumer, of the requirements for the grades will have a tendency to stabilize and promote a uniform scheme for handling such commodity.

As an illustration of what I have in mind, let me point out the Federal grades or standards, so-called, that have been announced by the United States Department of Agriculture, Bureau of Agricultural Economics, and the Michigan Bean Jobbers Association grades.

A careful analysis of the two will reveal points of great similarity and a tendency to a uniform classification. On the other hand there are terms used that are not in conformity and, while apparently small in themselves, lead to a wide divergence of opinion in the industry.

The United States standard for beans defines a "split bean" as one split or broken, and including pieces up to three-quarters of the size of the whole bean, but not including beans with cracked or checked skins only, while the definition by the Michigan Bean Jobbers Association is not so specific in its description and therefore gives an opportunity for the buyer or jobber to take out beans with checked skins.

This, on the surface, does not seem to be a serious difference and is not, insofar as the dry beans are a commercial article. However, when sold to the canner quite an important angle arises. Beans with checked skins, as is well known, are not the most desirable for canning. When such beans are soaked, blanched and prepared for canning every canner knows what to expect.

Another point in the two classes of grades, is the establishment of class 1 white beans and class 5 medium white beans, both characteristic of the varieties grown in the Great Lake region which, in fact, establishes two different classes of white beans grown commercially in that region.

There would seem ample justification for a revision of bean grades, harmonizing them, if possible, so that the jobbing trade,

the canning industry and the producing sections would all be working toward a common end.

Another very important difference in the two classes or grades emunerated is that of moisture. There is a disparity in the moisture tolerance of the Michigan Bean Jobbers' grade as compared with the United States grades which does not seem to be, on the surface, justifiable. Probably a more thorough investigation of this factor and its seasonal application would lead to the harmonizing of this feature in the two grades, promoting uniformity.

Any grade or description that uses terms that are not definite or specific is objectionable, because of its tendency to lead to a wide divergence in interpreting different grades.

I point out the term used in the Michigan Bean Jobbers' grade, "average color of crop year," as one which is meaningless and is so indefinite that it is bound to lead to controversy.

I am of the opinion that grades can be established and the language used be so clear and definite that it will not lead to fluctuation from year to year nor necessitate the changing of grades from time to time. Nothing upsets or brings about a chaotic condition in an industry more than the continual changing of classes and designations for grades or standards.

Another feature of the establishment of grades is the purpose to be served. It can be readily seen where bean grades can serve a very distinct purpose by facilitating uniformity of methods in the handling of dry beans, and yet the grades and designations may not be adequate to serve the commercial packing of such products in containers.

It is, therefore, apparent that all parties concerned in the matter of the establishing of grades for any agricultural product should be taken into consideration, and grades established that would serve and facilitate both the warehousing and the handling of the product as well as assist the industry that consumes the great bulk of the product.

Optional grades, that are set up without a legal background, are of little assistance to the regulatory official in aiding an industry. They are dependent upon the good will and business ethics of those engaged in handling such products, and an appeal for compulsory compliance is therefore of no avail.

The ideal grades, of course, are those that are agreeable to the industry and at the same time have a legal standing.

The canning industry as a whole has been the pioneer along the line of standardization.

In the history of food regulation and control it is common knowledge that the question of quality did not enter into the enactment of many of our food control measures. The identity of the article and its correct designation seemed to be the most important consideration. As the food industry has developed and grown to outstanding proportions we find that more attention is given today than ever before to the question of grades or quality in raw materials as well as in the finished products, and where standardization has taken place effectively with any commodity the development of that particular product is one of progress both in quality and value.

The establishment of standards either in raw materials used for canning or in finished products is, and should be a gradual one. No industry is in a position to revolutionize business methods, over night, and the old axiom that we must creep before we can walk is as true in the canning industry as in any other business.

You are all familiar with the publicity that has taken place in the last few years for legislation establishing grades. The purpose to be served, in many instances, has not been in behalf of the ultimate consumer so much as to aid business methods or the economic phases of handling commodities. For instance, certain legislation pertaining to the warehouse act would, primarily, assist packers in financing products.

On the other hand a lack of standardization in an industry tends to promote the packing of low grade products, and their consequent labeling and foisting on the public in the same manner and under the same designations as similar products of high quality.

A grading bill has been proposed in Congress for fixing a minimum quality for commercially packed food with the thought in mind that sub-standard, or lower quality of the same type of food would be designated, which would not only offer to the consumer the advantage of selecting a type of food appropriate, but would have a tendency to standardize and stabilize production of raw materials and finished products.

This is a step in the right direction and as soon as the industry is prepared to accept this form of standardization it will be found beneficial and, eventually, will lead to an opportunity for producers to obtain food products on a quality basis.

There is another angle to the bean industry which is deserving of the serious thought and consideration of food control officials, bean producers, jobbers and the canning industry and that is the so-called baked bean product. We are all familiar with the many types of "baked beans," and their manner of designation, that are on the market.

That there is no uniform method of preparing, processing and designating so-called baked beans is admitted. Each manufacturer has his own theory as to what a baked bean should be; these views do not always coincide with those of the consumers and we continually find questions arising as to why this product differs so widely from another product and still be designated the same.

No doubt a study and investigation along this line would lead to the elimination of many of the practices and unsound views that are now in vogue, to the end that we can visualize a future product accepted generally by the consuming public, commonly understood and serving a distinct purpose.

CHAIRMAN RAYMOND: Thank you, Chester, for taking that responsibility.

MR. ARTHUR C. DORRANCE (Campbell Soup Company, Camden, New Jersey): May I bring up a subject that is closely allied with Dr. Geagley's paper?

First of all, I think that it would be fitting that some expression should go forward from this Committee to the effect that we are deeply indebted to Dr. Geagley for his informative presentation of the matter of bean grades and the attendant difficulties.

Mr. Kimball has given us an illuminating talk on the statistics of the bean crop.

Mr. Greenleaf has touched upon the investigations conducted by the Association bearing upon the advantages of several types of beans. We can not but regret that he did not go a step farther and let us have the conclusions arrived at by the laboratory, but it seems to me the high point of the meeting is in Dr. Geagley's talk on the subject of the grading of beans.

Until the last two years there was fairly general satisfaction with the grades established by the Michigan Jobbers' Association and the New York State Bean Growers' Association. Since that time there has been a gradual tendency toward the lowering of quality. The allowable per cent of culls in the Michigan grade has been increased from one and one-half per cent to two per cent. The maximum moisture content has been increased from seventeen per cent up to January 1, to eighteen per cent thereafter until the new crop year.

Meanwhile, those engaged in the conditioning of foreign beans have perfected their methods. It is typical of the American public that we are inclined to regard our product, our home grown product, as the best in the world, and canners have proceeded on that assumption to favor our home grown beans above all others. With the lowering of the quality of our home grown beans, due to less care in conditioning, we have been obliged to admit that whereas Michigan beans are being marketed with a tolerance of two per cent and called "choice hand picked," Kotenashi and Ohtenashi beans pick under one-half of one per cent. Hungarian and Roumanian beans, which we are told come into the elevators with a much higher percentage of culls and foreign materials mixed with them, are conditioned so they fall well within a tolerance of one and one-half per cent.

It is not logical that the seller should govern the grades and should control the inspection service on any commodity. This of course is the case today with the several Bean Jobbers' Associations.

It is far more logical that there should be a non-partisan agency for the grading and the inspection of beans, and there is great danger that by this letting down of quality which is characterised in the recent policies of the Bean Growers' Associations we may, in effect, kill the goose that lays the golden eggs.

There is no more important matter to come before the meeting, in my opinion, than the immediate consideration of methods that will bring us back to the old high standard of grades and will at the same time rectify the present conditions under which the inspection service is operated and controlled by one of the two parties in a contract, in this case by the seller.

Mr. Chairman, as a means of expressing the consensus of opinion, I should like to present a resolution:

"Whereas, the foreign beans imported during the current season have been remarkable for their freedom from culls, split beans, stones and other objectionable material, thus giving evidence of care in preparation which is not equalled at present in the preparation of domestic pea beans, and,

"Whereas it is, in our judgment, imperative that the grading standards for domestic pea beans be substantially raised if the popularity and general acceptance of domestic pea beans is to be increased from year to year, now therefore be it

"RESOLVED, That we, members of the Baked Bean Section of the National Canners Association, being engaged in the can-

ning of pea beans, do most certainly urge the several Bean Jobbers' Associations in the United States to raise the existing standards for choice hand picked pea beans by decreasing the allowable tolerance for culls and other objectionable material to one and one-half per cent, and the maximum moisture content to seventeen per cent, and be it further

"RESOLVED, That the Baked Bean Section shall, and it does hereby urgently request the several Bean Jobbers' Associations above mentioned to adopt as the official basis for transactions in pea beans the grades established by the Bureau of Agricultural Economics of the United States Department of Agriculture and the inspection service already organized for the application of said federal grades, this being in our judgment the best available agency for the impartial determination of grades for pea beans, and be it further

"RESOLVED, That the Secretary be, and is hereby directed to send true copies of this resolution to the Michigan Bean Jobbers' Association, the New York State Bean Jobbers' Association, and to the Chief of the Bureau of Agricultural Economics, United States Department of Agriculture."

MR. H. S. BROWER (Rochester, New York): I agree with that gentleman's remarks one hundred per cent. We have found, in our experience in the past year, that there has been a letdown in the quality of beans, especially Michigan beans, and we are finding more stones in these beans than ever before. I believe something ought to be done. I would rather go out of the bean business than accept some of the beans one has to accept today of the present grades, and I agree one hundred per cent with the remarks that were made. I move the adoption of that resolution.

MR. M. J. HART (Saginaw, Michigan): I should like to ask that gentleman if he has Michigan Jobbers' certificates on those supposedly choice picked beans?

MR. BROWER: We buy them through a jobber. We buy them as choice hand picked beans, and we have found much more stone in Michigan beans this year than we did previously.

MR. HART: Would you get the same stones if you had a certificate?

MR. BROWER: I have accumulated a gallon jar of stones which I have saved from those beans, because I thought some day somebody would want evidence.

MR. HART: You are not answering my question, and if you are not buying your beans under that standard, there is no room for criticism of the present grades. If you are buying beans without any grading, buying just simply by name, and not demanding the certificate available, you should not criticise the grades.

I am a grower, and the agriculturist today is a victim of the Bureau of Economics of the Department of Agriculture in these grades. There is no other line of industry that is so graded, looked over, as is agriculture. The farmer who produces the wheat is the subject of federal grading. The man who receives the grain at the loading station has it graded by a federal inspector. At the destination a federal man grades it once more, and then he is put up against an appeal to another Board, and there is no end to his appeals. He never knows when he ships his produce how many inspectors are going to pass upon it.

There is no other line of industry that the government attempts to grade and fix standards for as it does agriculture. Take the oil industry. You can buy practically the same grade of oil sold under a brand name in carloads f. o. b. Chicago for twenty cents a gallon that the farmer has to pay a dollar and more for. The farmer has to buy the highest priced oil he can get. If he buys oil without any grade, he has no way of knowing what he is getting.

The government comes in and places a hard and fixed grade upon the farmer. All those things militate against his price in the open market. His costs go up and they are charged back to him.

These tolerances work a good deal the same as discounts. You give a one per cent discount on beans. It is very favorable to the buyer, but let the producer attempt to figure that out on a competitive market. It will militate against the grower eventually. All these tolerances or increased costs are reflected back on the grower.

When you raise these standards one-half of one per cent it does not go up in proportion. It goes up geometrically.

The Bureau of Economics is not in the habit of handling these in a commercial way. We have not the same labor as they have in the Orient to prepare Japanese Kotenashi and Ohtenashi beans. They are not handled by the same methods. They are picked over, they tell me, on a broad table, where labor is worth about twenty cents a day, and each bean is rolled over by hand. If we attempted to prepare our beans that way the costs would go up terrifically. Our labor is higher priced.

Then there is the American attitude of mind. We are not Orientals, and you have a condition to contend with here that you do not contend with there.

So far as the grades as now established are concerned, I do not think we have lowered the grades in Michigan. Prior to the change from one-half of one per cent it did not provide in the contract that beans were to be hand picked. It provided for one and one-half per cent tolerance, which might mean badly decomposed beans, or beans damaged by rust, disease, or anything else. Today they must pass the inspector as real, hand picked beans. The badly damaged beans must be removed. If they are not, they are reduced to the next grade below.

One of the reasons for making the changes was, we found in commercially operating the plants that frequently these beans would drop outside of the one and one-half per cent to probably one and three-quarters per cent, and the car was rejected, and a charge made of twenty-five cents a hundred for prime beans.

KENNITH N. RIDER
Secretary, Indiana Canners Association.

That was a heavy loss upon the shipper, and had to be taken into consideration when you purchased the beans and it was reflected back on the grower.

We have not changed the standards, but we have provided standards so that it is humanly possible to produce the beans you set out to produce.

was questioned by the Department of Agriculture, and a stan-

With reference to moisture, during the war our equipment dard of equipment was set up. When we got equipped with the new standards, they did not tally with the old. Our old contract provided for seventeen per cent moisture, and we were having beans rejected constantly with a rejection of four hundred pounds to the car. When we found we could not purchase beans that ran uniformly seventeen per cent we changed the moisture content to eighteen.

Just recently I sold some beans that were scheduled to go to the Marines at Quantico. The specifications are sixteen per cent. I bid forty cents a hundred over the market all over the State, trying to purchase sixteen per cent beans, and was not able to, and I found in making tests that nearly all the beans ran right around eighteen per cent, from seventeen and a fraction up to eighteen. A lot of cars were tested. That would mean a great loss charged back to the grower at a time when our government is trying to relieve the farmer. It looks to me as if he is being relieved—of what he has.

I also find that the purchasers who are crying most with reference to our grades are not even demanding the certificates. They are buying beans where they can buy them cheapest. If they had a certificate, and one stone were found, the car would be thrown back to the C. R. C. grade.

MR. FRANK GERBER (Fremont Canning Company): In supporting this resolution, I think it might be well to make a brief statement in regard to it.

Reference is made in the resolution to the change recently made in the grades. You will recall the way in which there was stressed in Dr. Geagley's paper the desirability of having standards and which would not be frequently changed.

The grades of Michigan beans were changed recently. Those changes, and the results of those changes, have proven quite unsatisfactory to the canning industry, so much so that at a meeting of the Bean Canners, a meeting in which those partici-

pating were in part members of the National Canners Association, and in part canners who were not members of the Association, their thought was expressed in a resolution similarly worded to the one which Mr. Dorrance read, the only difference being that that resolution as originally drawn specifies the wish and the desire of individual concerns, while the proposed resolution is to express the wish of the Bean Section of the National Canners Association, and it should be kept in mind that this is merely an expression of a wish that the Michigan Bean Jobbers' Association and the other associations should give consideration to these questions.

I think it in order to say that a discussion of the merits of the proposal, or of the grades, and what constitutes proper grading, is outside of the scope of the discussion of the moment. The only thing really before this meeting at the moment is the question of whether or not it is desirable to go to the Michigan Bean Jobbers in a friendly way and ask for consideration of this subject. That, as I comprehend it, is all of the subject now before us.

Just as a matter of information, I should say that the informal resolution is signed by Van Camps, Heinz, Marshall Canning Company, Sniders, American Packing Company, Libby, McNeill & Libby, the Quaker Maid Company, Reid Murdoch & Co., P. J. Reynard, the Fremont Canning Company and the Campbell Soup Company. There is quite a representative group of the bean canners of the country who have thought that these grades should be revised, or at least that consideration should be given to the revision of the grades. That is all the resolution proposes, although there is the recommendation of the adoption of the federal grading.

That is merely a recommendation, and with that explanation, it seems to me quite in order that the Bean Section, if it approves of this request for consideration, should express itself by the adoption of this resolution, but I feel, Mr. Chairman, that our consideration should be limited just to the question of whether or not we wish to make this recommendation to the Michigan Jobbers' Association and the other bean jobbers' associations.

I respectfully request their consideration, and I again repeat my endorsement of the proposal.

CHAIRMAN RAYMOND: Has anyone else anything to say?

It has been moved and seconded that we adopt the resolution as read by Mr. Dorrance. All in favor of that motion signify by saying "Aye." Contrary, "No." The motion is carried.

Mr. Dunn, of the Division of Simplified Practice, United States Department of Commerce, Washington, D. C., is the next speaker. His subject is "Simplification of Containers" and I will pass the copies of his paper among you.

MR. P. H. H. DUNN (Division of Simplified Practice, United States Department of Commerce, Washington, D. C.): The function of this is not only to reduce the number of sizes used today, but it would also do away with the introduction of new sizes seasonally, which of course affects labels, machines, and everything else. We believe there is a great deal of benefit for everybody in this program, and if there are any questions about it, I should like to have you ask them, and I will answer those I can from my experience in conducting the survey. I am not a canner, and have very little experience in the canning industry. I thank you. (Applause.)

CHAIRMAN RAYMOND: Has anyone anything to say in regard to Mr. Dunn's talk? I wish to thank Mr. Dunn for appearing this morning. We appreciate it very much.

We will have the report of the Nominating Committee.

THE ELECTION

MR. HARRY McDONALD: The Nominating Committee recommends as Chairman for the next year Mr. R. O. Seeley, and as Secretary, Mr. A. C. Dorrance.

MR. DORRANCE: I will have to decline, as I will not be able to attend the convention next year.

CHAIRMAN RAYMOND: Why not one of the Nominating Committee? How about you, Mr. McDonald? All those in favor of Mr. Seeley as Chairman and Mr. McDonald as Secretary, signify by saying "Aye." Contrary, "No." They are elected.

The meeting adjourned at eleven-forty o'clock.

Corn Section

Thursday Morning, January 23, 1930, 9:40 A. M:

NORTH BALLROOM, STEVENS HOTEL

W. P. Hartman, Grand Rapids, Michigan, presiding.

THE meeting of the Corn Section of the National Canners Association, convened at nine-forty o'clock, Mr. W. P. Hartman, Grand Rapids, Michigan, presiding.

CHAIRMAN HARTMAN: The first thing is the appointment of the Nominating Committee to recommend for nomination a Chairman and a Secretary for the section for the ensuing year. On that committee I shall appoint Mr. E. G. Cover of Maryland and Mr. L. S. Argall of Iowa. That committee will be prepared to make its report preceding the last number on the printed program.

The section at the present time is without a Secretary. In your section last year you elected Mr. Argall of Iowa as Secretary. At the same time he was elected Chairman in another section, so naturally he resigned his secretaryship. The office was not filled and we will not bother with the detail of filling the office this morning. So the Nominating Committee may take that into account in making its recommendations for the next year.

We have a crowded program and we have asked each speaker to limit himself to a given number of minutes in his talk. The chair will advise the speaker two minutes ahead of the expiration of his time so that there will be nothing personal if the speaker is asked to stop in the midst of a paragraph, so to speak.

At this time we will ask Mr. D. F. Sampson to give his address, the subject being "Processing and Cooking of No. 10 Whole Grain Canned Corn." Dr. D. F. Sampson, Research Division, American Can Company, Chicago, Illinois. (Applause.)

PROCESSING AND COOKING OF No. 10 WHOLE GRAINED CANNED CORN

By D. F. SAMPSON

Research Division, American Can Company, Chicago, Ill.

THE increasing interest of corn packers in the canning of whole grain corn has raised the question of the canning of this product in No. 10 cans for hotel and restaurant consumption. If this canning is to be successful, the product must be of good quality, for many people will judge the new product by what they eat in hotel dining rooms. If the No. 10 corn is of exceptional quality, its use by hotels and restaurants will not only open this market, but will serve to introduce it for home consumption in smaller cans.

The principal difference between No. 2 and No. 10 corn is that of process, since the preparation of the corn up to the point of filling the cans is the same for both cans. So we wish to discuss the factors that effect the process, and consequently the quality.

CLEANING OF CORN

Experience has shown that thoroughly cleaned and washed corn requires a shorter process than improperly cleaned or unwashed corn. This is due to the removal of chaff, silk and small particles of kernel that retard the heat penetration and a reduction in the number of bacteria present in the corn. It is important to see that the cleaning and washing equipment is so designed that there is no opportunity for corn to remain on the cutters or in the cleaning equipment for more than a few minutes. Corn that collects on the cutters and other equipment and re-

mains therefor hours affords an excellent medium for bacterial growth, and consequently heavily cantaminated corn that will require a long process.

FILL

The fill of corn in each can will affect the process, since overfilling of cans will retard the heat penetration, and consequently the amount of corn placed in each can must be carefully controlled. The best check on fill is the cut-out weight, since the corn absorbs water during the process. This should be checked several times a day to insure proper control of this factor, for overfilled cans will mean ineffective processing. As a rule, the maximum cut-out weight should be 72 ounces.

BRINE TEMPERATURE

The brine filled into each can should be filled in at as high a temperature as possible, since it is easier to heat the brine before than after it is in the cans. Hot brine means a shorter exhaust, and consequently lower steam consumption and better quality.

EXHAUST

The exhaust is very important. Over-exhausted cans will panel when cooled, while under-exhausted cans may buckle during the process. The average temperature at the end if the exhaust should be 180°. However, at times such an average temperature will be secured by raising the brine at the top of the can almost to boiling, while the mass of corn at the bottom of the can may not have reached a temperature sufficient to expel entrapped air from the corn. and a low vacuum can will result. Extreme care should be taken to see that the corn in the bottom of the can becomes hot enough to expel this air.

THE PROCESS

The process must be adapted to factory conditions, so we cannot state a process that is satisfactory for all factories. The type of corn, methods of handling and bacterial contamination will vary from plant to plant and the process must be adapted to these conditions.

Well-cleaned whole-grain corn has been packed commercially in No. 10 cans with a process of 60 minutes at 250°. On the other hand, this same process was ineffectual in the same plant when the corn was poorly cleaned.

Before commercial production is undertaken the process should be checked by incubation of a semi-commercial pack made by use of the equipment to be used for the commercial pack.

After a process has been determined its successful use is dependent upon careful control of all operations, particularly processing and cooling. Particular attention should be paid to the process, since a difference of a few minutes, or a degree in processing temperature, may cause spoilage.

The best process for No. 10 cans will utilize a rapid come-up, with proper venting of the retort to drive out the air to avoid air pockets. Once the retort comes to processing temperature this temperature should be maintained to the exact degree throughout the process.

At the end of the process the steam should be shut off and the retort filled with water as rapidly as possible, but the pressure should not drop at all during this period. The best method of doing this involves the use of compressed air to maintain the retort pressure while the water is admitted as a spray at the top. To do this the water is admitted slowly at first until the steam is condensed and the retort filled with air and water.

Once the retort is filled with water the hot water should be driven from the retort through the overflow by means of a rapid onflow of cold water. As the hot water is driven from the retort the inflow should be decreased to conserve the water supply, but the inflow should be sufficient to provide enough cool water to cool the cans properly.

As the pressure in the cans drops, the pressure in the retort should be decreased accordingly to prevent panelling of the cans. After the pressure has been brought down, the cooling should be continued until the cans have been cooled to a center temperature of about 100 degrees.

AUTOMATICALLY CONTROLLED PROCESS

A process such as that just described requires exact control to insure uniformity of product. The best and most exact control is secured by the use of air operated control instruments. During the last packing season two companies, the American Can Company and the Taylor Instrument Company, co-operated in the development of a system of complete automatic control of processing and cooling No. 10 cans. This system was set up and tested under commercial packing conditions and found to be entirely satisfactory. This system enables the packer to follow the processing and cooling method just outlined and, by eliminating the personal factor, offers the canner a method of retort operation that will assist in producting uniform quality and reasonable assurance that buckling due to faulty cooling will not occur.

We cannot describe the system in detail, since a complete description would require considerable time, but we will point out a few salient features.

The system utilizes two controllers, one to control the temperatures and pressure during processing and cooling and the other to regulate the flow of the cooling water according to the temperature of the overflow water from the retort. The setting of a small trip or trigger in the first instrument described determines the end of the process and the start of the cooling period.

The use of this system enables the operator to set one instrument by turning a key and thus start the process and cool without further attention. The instrument automatically brings the retort to processing temperature and vents all air from the retort. The temperature is maintained to the exact degree for the duration of the process and the pressure held at that of steam at the processing temperature until two minutes before the end of the process. At that time the pressure is automatically raised four pounds above the processing pressure by admission of compressed air. This air serves to maintain the pressure in the retort when cooling water is admitted by a special "V" port valve which admits a gradually increasing stream of water as a spray at the top of the retort. When the retort fills, the water flows from the overflow valve and in passing through this valve comes in contact with the element of a temperature controller that controls the incoming water. When the overflow water reaches a certain temperature, say 90 degrees, the inflow of water is stopped, and at the same time the water inlet is changed from the top of the retort to the bottom of the retort and from that time until the end of the cooling period water enters the retort from the bottom at such a rate that the overflow is at 90 degrees. Thus no more water is used than that necessary to properly cool the cans.

W. P. HARTMAN

W. R. Roach & Co., President Mich. Canners Association.

From the time water is admitted to the retort the pressure control instrument gradually decreases the pressure in the retort to avoid panelling the cans.

When the cool is completed the cooling water is automatically shut off and the steam and air valves are automatically maintained closed until the instrument is reset for the next process.

Provision is also made for automatically changing from one retort temperature to another if a two-temperature process is desired. The system is also designed so that failure of the air supply will automatically shut off the water and steam supplies so that there will be no danger of excess pressure in the retort, but at the same time the overflow valve closes tightly to maintain the retort pressure for as long a time as possible to prevent the serious effect upon the cans of a sudden blow-down that might result from shutting off the steam and water.

Good results cannot be obtained with this system or any other system of retort control if steam, water, and air supplies are insufficient. Boiler capacity and pipe sizes should be sufficient to provide a good supply of steam to each retort. There must be an adequate supply of water at a constant pressure and temperature so that the retorts may each be rapidly filled with water. The air supply must be available at all times and should

not be affected by other demands of the plant, particularly that used for operating the control instruments.

CHAIRMAN HARTMAN: Dr. Sampson, we are grateful to you for this splendid paper on a subject that is of considerable interest to packers of whole grain corn and packers in general. Are there any questions that you would like to ask Dr. Sampson at this time?

MR. H. R. SMITH (National Canners Research Laboratory): On account of the importance of the cut-out weight of which Dr. Sampson spoke, I wonder if you would be kind enough to explain in a little detail the method of determining the cut-out weight of that corn. I think it might be helpful to clarify that in the minds of everyone, just how you determine your cut-out weight.

DR. SAMPSON: In reply to that question, I will answer it very briefly. You should select four cans, assuming you have a four-pocket filler, in succession and you cover each pocket with a filler. Mark them before they go to the process. After they are processed and thoroughly cooled, select these four cans, take vacuum on the can, open the can, empty the corn on a screen of about ⅛ inch mesh, and let it drain for two minutes. Then weigh the corn on the screen. The figure I referred to as the maximum permissible will be about 72 ounces. A slight variation may have to occur for different kinds of corn to insure the appearance of a can being properly filled.

MR. H. R. SMITH: There is a similar point about measuring the temperature after the exhaust. I think details of just how you determine the temperature of the can at the end of the exhaust would be helpful.

DR. SAMPSON: In answer to that question, I will give just a little bit of experience. I have taken No. 10 cans of whole grain corn coming from an exhaust box, inserted a thermometer just in the brine layer at the top, and found a temperature of 190 degrees, but in taking the temperature of the corn at the very bottom of the can I have found 140 degrees.

To make certain of your average temperature, the contents of the can should be well stirred together and the temperature taken. That is about as simple a method as can be done without disturbing the line in the factory as the cans come out of the exhaust box. However, check the temperature of the corn at the bottom of the can by inserting the thermometer to the bottom of the can sometime during the operation to make certain the corn at the bottom of the can comes to 160 degrees.

Also, with reference to the temperature variation within the can, I might say a number of exhaust boxes in use permit the No. 10 cans to rest on a solid plate and we have a layer of air at the bottom of the can, and that plate has a very good heat insulator. The steam admitted to the exhaust box comes against the side of the can one or two inches above the bottom and then rises, and then the heat is not given directly to the bottom of the can and is not transmitted to the corn in the bottom of the can.

For running No. 10 whole grain corn it would be advisable to have some slight changes made in the exhaust boxes. I believe some of the canning machinery supply concerns are aware of that problem and are designing such equipment.

CHAIRMAN HARTMAN: Are there any other questions? If not, again we thank you, Dr. Sampson.

Corporations and individuals are learning that the most valuable asset they have is good will, whether it is with the customer at the other end of the line or with the grower at the production end in our case, or with folk who buy a commodity known as transportation. Outstanding among transportation lines of the country, the Pennsylvania Railroad (I can say that with a sense of loyalty because I was on their payroll for ten or twelve years and have a sense of loyalty toward the old Pennsylvania) have a quartette singing before audiences throughout the Central West. At no cost to our Association, but giving their services this morning in entertaining us in this and the other two sections (which has since been arranged), we have with us at this time the Rainbow Quartette of the Pennsylvania Railroad.

Singing by the Rainbow Quaretette. (Applause.)

CHAIRMAN HARTMAN: At this time I will read a memorandum that comes to this section from the Secretary's office: "The Census Bureau sent out schedules the first week in January calling for a report on the stocks of corn, peas and tomatoes in the warehouses of canners and distributors. The date on which the final figures in this survey can be issued by the Census Bureau will depend entirely on the promptness with which the canners and distributors return the schedules. The report to be made by canners should include all stocks of corn held in their canneries or warehouses, including stocks held for future delivery and stocks that have been shipped to dealers on a consignment basis. In other words, the total reported by each canner should represent all stocks of canned corn owned or held by them on December 31, 1929.

"This memorandum is furnished to you with the idea that you may wish to make an announcement at the meeting of the Corn Section on Thursday morning."

On behalf of the Secretary's office, naturally we appeal for your co-operation in getting the figures back to the Census Bureau in order that you and everyone else in the industry may have some idea of the real facts, statistically speaking.

At this time it is a pleasure to introduce, or rather to present him because all of you know him, Dr. E. J. Cameron of the Research Laboratory of the National Canners Association on the subject "Sterility in Canned Corn." (Applause.)

STERILITY IN CANNED CORN

By E. J. CAMERON
Research Laboratory, National Canners Association.

IT is well known that not all canned corn is sterile. It may contain very resistant spores of obligate thermophiles (which require temperatures well above 100 degrees F. for growth), which will not develop at the usual temperatures of storage.

At the last National Convention, while discussing our field laboratory activities before this section, I related our findings with particular reference to the question of total sterility in canned corn. It was emphasized that when canned corn is not sterile by reason of the presence of obligate thermophiles, spoilage produced by these bacteria can be prevented by adequate cooling. Nevertheless, it was stated that total sterility would be a great advantage in tropical or semi-tropical trade, and further than this, the menace of spoilage through under-cooling would not exist where total sterility was attained. It was finally stated that we were to continue study of the general question during the 1929 season.

Up to this time, our direct bacteriological tests have indicated three factors to be responsible for non-sterility in canned corn. These are sugar, the brine system, and the cooking system. It has already been brought to your attention that the refined sugar used by canners may contain spoilage contamination to various degrees. The brine system of itself is a factor, in our experience, only when wooden tanks are used. Cooking or preheating systems are involved in contamination difficulties roughly in proportion to the complexity of the system. In general we find the lowest thermophilic contamination where the corn and brine are mixed while cold and the only pre-heat given in a cooker at the filler.

During the 1929 season, in order to approach the problem from another angle and to test the validity of our direct bacteriological results, a series of experimental packs were put up which were so planned as to throw some light on the subject. This paper constitutes a short report on the results of these packs.

The experimental packs were put up in three canneries. In each cannery one lot of corn was canned in the usual way; that is, the corn and brine were mixed and heated and canned without any departure from the commercial procedure. A second lot was prepared by taking the corn as it came from the silker and mixing it with brine which had previously been sterilized. The whole mixture was heated in large milk cans and, after heating, the corn was filled into cans by hand. In this second lot it will be noted that there was no exposure to the cooking or filling systems, and there was no question of sugar or brine contamination involved. Batches from each of the two lots were given processes of 45, 60 and 70 minutes at 250 degrees F. After processing, all cans were incubated at 130 degrees F. This constitutes the strictest incubation test for canned corn, since it will bring about spoilage by the obligate thermophilic bacteria.

With the experimental lots prepared as has been indicated, we would expect after incubation to find materially more spoilage in the corn canned by the usual procedure than in the corn canned by hand, assuming that the conclusions from direct bacteriological tests were valid. The results of these three packs were as follows:

	Per cent Spoilage at Processes Indicated		
	45-250	60-250	70-250
Pack No. 1:			
(a) Corn canned in usual way	100	9.1	0
(b) Corn with sterile brine, mixed by hand	8.5	0	0
Pack No. 2:			
(a) Corn canned in usual way	100	97.9	2.1
(b) Corn with sterile brine, mixed by hand	2.1	0	0
Pack No. 3:			
(a) Corn canned in usual way	95.0	12.5	0
(b) Corn with sterile brine, mixed by hand	6.8	0	0

It will be seen that in all three cases where the sterile brine was used and where the corn was mixed by hand in preparation

for canning, total sterility was attained between 45 and 60 minutes at 250 degrees F. A small percentage of spoilage occurred after the 45-minute cook (8.5 per cent, 21 per cent, 6.8 per cent), but there was no spoilage following the 60-minute process. Where the corn was canned in the usual way, there was 100 per cent spoilage in two of the packs and 95 per cent in the third after 45 minutes at 250 degrees F. After the 70-minute process, pack No. 2 showed about 2 per cent spoilage in the corn canned in the usual way.

The fact that we obtained total sterility from 45 to 60 minutes at 250 degrees F. in the experimentally prepared batches is not to be taken to mean that we wish to modify existing recommendations for the processing of corn. The reason for this statement is obvious, if it is borne in mind that the work was done on more or less of a laboratory scale. The significance of our results is based on the fact that by two experimental methods, that is, by direct bacteriological tests and by experimental packs, we have limited the principle sources of thermophilic infection to the points mentioned. We have not tried to evaluate the relative importance of the individual factors, since this would vary widely in different canning plants. But we now have reasonable assurance that we can concentrate on all three of these factors in future work.

To date we have this much to our advantage; the factor of sugar can be taken care of by having samples tested by competent laboratories, and the brine system can be removed from any responsibility by using hard surfaced equipment. Our future work must center on the pre-heating equipment, and at present there are certain control measures which can be exercised at this point. Such measures are thorough cooling and cleaning after the day's canning has been completed, and simplification of the more complex systems to permit more thorough cleaning.

CHAIRMAN HARTMAN: Thank you very much, Dr. Cameron. Are there any questions that you would like to ask Dr. Cameron bearing upon this subject?

MR. SEARS (Illinois): What do you mean by sterilizing the brine? What temperature do you use?

DR. CAMERON: That was something that could not be used. We sterilized it for, as I recall it, about one hour at 250 degrees in No. 10 cans. Of course, it was sterile at that point.

Research Applied to Food Distribution Problems

By Wroe Alderson
Domestic Commerce Division, U. S. Department of Commerce.

DISTRIBUTION research enters into practical effect through the medium of decisions based upon it by the retailer, wholesaler and manufacturer. Each of these factors is engaged in buying commodities and selling them to customers. Operations are performed upon commodities to make them ready for consumption or to facilitate their transfer from supply source to user. The natural elements of a business, therefore, are commodities, customers and operations. These are the items that the business man must think about in any effort to improve his position.

Improvement from the public point of view means the performance of essential functions at lower cost. Improvement from the personal point of view means taking a larger profit from these operations. Both forms of progress argue less waste and greater efficiency. What to Sell and Whom to Sell are questions that receive the answer from tradition and inertia, "Sell everything to everybody." A more profitable answer can be based on detailed sales and cost data for each commodity and customer. The processes of a business are usually founded on innumerable dead men's decisions, which have grown sacrosanct because no one can remember their origin. As a matter of fact, no business man can afford the heroic experiment of trying new methods in every department of his business at once. But in each individual concern there is usually some phase of operations which is seen freshly, some innovation in method with value tested by experience. An ideal establishment can usually be put together by considering all the good features characterizing the separate concerns in any field.

From the latter point of view distribution research consists in collecting for publication the results of many small, unofficial experiments. It gives methods and principles discovered in a small way a chance to apply in a big way. It relieves many a hard-pressed operator from the necessity for trial and error and presents him with a repertoire of tested expedients. Thus the best thought on each phase of operations becomes part of the body of common knowledge, and figures are at the same time made available showing the results of innovations in dollars and cents.

Distribution research goes much further than such a survey of experiments and results, however. "No man's thinking is better than his information. The best minds in an industry cannot have solved its vital problems, even for themselves, where essential information is lacking. Studies of the Department of Commerce indicate about all else that the ordinary processes of accounting and record-keeping are not providing the needed information. Some of the necessary data might be obtainable currently with a slight change in the form in which records are cast. Other kinds of facts can be gotten more cheaply by a special research organization, developing information available to an entire group or trade. Some types of data can scarcely be obtained at all unless the research agency is one of outstanding prestige and recognized impartiality.

"DAN" GERBER
Fremont Canning Company.

A great fact-finding effort like that proposed for the electrical trade in Pittsburgh has thus an immediate purpose of a threefold nature. It expands the sources of business information in the following main directions:

1. Collecting information on improved methods and the measurement of their results, together with the encouragement of further experimentation.
2. Gathering of basic facts concerning distribution which can only be gathered by an independent agency with recognized prestige and impartiality.
3. Devising methods of record-keeping and analysis in modification of present accounting, from which essential information can be derived currently by individual concerns.

All three phases of distribution research are illustrated by the Louisville Grocery Survey. Instances of application for one type or the other may be noted in summarizing the practical results which have already accrued in that market. The total volume of trade for retail and wholesale outlets and by types of commodities, being determined for the first time, provides a picture of the food distribution problem as instanced in Louisville. This volume of sales must remain a fairly stable figure, regardless of how numbers or types of outlets may fluctuate.

The independent wholesaler-retailer system may draw some comfort from the picture shown of its competitive position with relation to chain stores. Total chain store volume was a considerably smaller factor than was estimated by local dealers. Within the last few years it has been the chain store which was forced to make adjustments. The true competitive strength of the independent retailer is reffected by the fact that the chain systems are attempting to parallel his operations more closely. For example, Louisville has seen the almost complete disappearance of the specialized food shops selling one type of product only, such as fruit and vegetable stores, meat markets, retail bakeries and grocery stores handling strictly packaged foods. The dominant type of outlet is the general food store, handling meats, fresh fruits and vegetables, bakery and dairy products in addition to bulk and packaged groceries. Not only does this type prevail among independents, but all chain outlets have recently added meats and fresh fruits and vegetables to their lines.

A more important trend is the growth of prepared meal and refreshment types of outlets. Over 20 per cent of all food and

related products purchased in Louisville in 1928 was consumed on the premises where purchased. This is a large figure, considering that Louisville is a city of homes and that eating in public places is not so prevalent as in more metropolitan centers.

Some fundamental facts have been uncovered concerning economy of operation. Up to $50,000 annual sales volume there is a constant increase in efficiency as reflected by a decreasing ratio of expense to sales. This holds for both salaries and rent, the two major items of expense in retail stores. At $50,000 favorable ratios are reached of $13,000 sales per person engaged and a ratio of rent to sales of 1½ per cent. Above that figure economies are to be sought in terms of improved methods, rather than an increase in sales volume. One such improved method which has brought gratifying results in Louisville has been the use of modern store arrangement, resulting in a greatly increased volume of sales per person engaged. It is also apparent that a really efficient system of retailing will bring still further economies.

Ratio of rent to sales is highest where merchandise bought is consumed on the premises, of average importance where merchandise is selected on the premises but consumed elsewhere, and lowest where orders are phoned in or given to a salsman, with the customer seldom entering the store. By this service and delivery method one Louisville retailer, selling over $100,000 annually, has his ratio of rent to sales come down to 1 per cent. Approximately 75 per cent of his volume is delivered to the homes of his customers. To sell an equal volume, entirely cash and carry, would require much larger quarters and a prominent location to attract trade. Similar stores, using the cash and carry method in Louisville, find it hard to get their ratio of rent to sales as low as 3 per cent.

The economy of delivery to the customer over well-established routes, with a limited number of services daily, has been well proved by the success of milk retailing by wagon routes. With the advantage of larger orders, which definitely pertains to the delivery system, and of faster assembly of orders when the customer is not present in the store, it is quite conceivable that a delivery system of serving groceries can be worked out which is cheaper than prevailing cash-and-carry systems.

So much space has been devoted to developing a picture of the future food outlets and methods of food distribution because it is believed that all worth-while types of advance will come about by discovering more efficient and cheaper methods of distributing a particular class of products, and not by discovering more effective weapons of competition.

The retail stores involved in the Louisville Survey have been quick to avail themselves of its findings. Store arrangement was indicated as one of the fundamentals of improved retailing. Dozens of stores have been completely remodeled and in every instance are able to report definite benefits. All have cases. One store secured 10 per cent more volume and was able to release two clerks. Family stores which do not hire outside labor are receiving a dividend in the form of greater leisure for all members of the family, even while the increase in business continues.

Store remodeling has nearly always been followed by a reduction of inventory. If the merchant understands the message of display he sees the folly of keeping anything which cannot be kept in sight. The taxing of physical inventories by the survey crews resulted in the elimination of many obsolete and worthless items which detracted from the store's appearance and increased the difficulty of stock control. One merchant eliminated 15 per cent of his inventory by value during the three months of the survey. Items eliminated were slow movers of unnecessary duplications of brands or sizes represented by more profitable items.

In some instances the stores have established permanent systems of records similar to those used during the course of the survey, which indicate how various items are selling and provide guidance for buying. Thus the retailer is never caught short on important items, nor does he pile up surpluses on slow movers. All of these changes are resulting in reduction of sales expense and increase in sales volume, leaving a greater margin for either profits or reduction of prices to the consumer.

The retailer is having called to his attention by means of the survey his needless multiplication of supply sources, with resulting cost to both himself and the wholesaler. The average grocery retailer was dealing with 52 supply sources out of a total of 145 food wholesalers of all kinds. If each retailer would arbitrarily cut out half of his supply sources the result would be unquestioned benefit to himself, to the wholesaler from whom he continued to buy, and to those he cut from his list. The retailer would be under less trouble and expense in buying and all wholesalers would receive larger orders.

Although the survey indicated the ultimate strength of the delivery system of merchandising food, it does not indicate that the present system has attained a maximum efficiency. The 28 retailers surveyed in Louisville were a delatively small sample of the thousand grocers in that city. Yet every man of the 28 was encircling several of the others on his delivery routes. In addition some retailers went over their routes as high as five times a day. As handled at present, each order of groceries is unquestionably requiring a great deal of necessary track mileage. This problem requires some form of joint action, if it be no more than an agreement on common principles concerning a logical limitation of territory and amount of service extended. Such common action is already yielding great benefits in the exchange of credit information. The Credit Survey conducted in Louisville indicated an immense advantage in administering credit on the part of those stores which made use of the services of a credit bureau.

It encourages skepticism with regard to the vaunted economies of the cash-and-carry system when it is observed that credit and delivery stores are still able to compete while preserving gross inefficiencies in the discharge of these functions.

It has long been the fashion for the wholesaler to profess his inability to cope with the small-order situation. He cries out concerning hand-to-mouth buying and figures that the whole problem is quite beyond his control. Statistics on retail sales have clearly indicated that small orders arise from hand-to-mouth selling fully as much as from hand-to-mouth buying. In Louisville approximately 20 per cent of the retail grocers have an annual volume of less than $5,000. Such a grocer is unable to give any wholesaler profitable orders, and the wholesaler will be aggravating his small-order problem as long as he continues to serve such dealers. One such retailer in Louisville was found to be costing the wholesale trade of Louisville about $7.50 a day in selling expense, a figure approximately equal to his total sales volume.

Louisville wholesalers have worked out several methods of customer selection, apparently fully successful. One man had his salesmen classify customers and estimate their sales volume. On the basis of this information he has eliminated several hundred customers, with a resulting increase in sales volume from proper cultivation of the remainder. At the same times sales expense has materially decreased. Another man not only requires adequate volume, but good location, modern arrangement, and other elements of good management from his customers. He has succeeded in securing the concentrated business of a large proportion of his customers. As a result he has been able to cut sales expense drastically by eliminating a large sales force and maintaining contact with his customers by a few none-selling representatives.

Proper warehouse arrangement is at least as much a problem as proper retail store arrangement. Energy is measured in foot-pounds. The ideal warehouse will be the one in which the smallest product is obtained by multiplying the tonnage of goods handled by the number of feet they must move in passing through the warehouse. Many of the better warehouses are already exemplifying fundamental principles of arrangement. Fastest moving items are permitted to move by the shortest paths. There is a specializing of space as between dead storage and working stock. Arrangement is of a standardized and permanent character, so as to facilitate frequent physical inventories. Floor assembly sheets are prepared, listing all items in the order in which they are found, thus greatly facilitating the assembly of merchandise.

The most efficient way for goods to be moved is by hand truck or tractor. The least efficient is one case at a time, carried by a laborer. Proper arrangement increases trucking distances and cuts down carrying distances. The use of labor-saving devices is of growing importance in wholesale handling. The freight elevator is an antiquated method of lifting goods in a multiple story warehouse. It is being superseded in progressive establishments by the vertical conveyor. Many labor-saving devices are already available through the use of removable truck bodies, lateral and overhead conveyors. These devices are finding their best use in cutting down the amount of labor involved at the point of assembly.

Executive control requires close knowledge of the movement of goods through the house. Control systems are being successfully operated in many lines, including grocery, dry goods and paints. Many of these systems are not immediately applicable to some of the older establishments. This is the fault of the establishment rather than the system. When they adopt model warehouse arrangement, proper policies of buying and merchandising, they will be able to use control methods developed by the

more progressive concerns. In practically every instance it is being found that the new records can be obtained practically without cost if the new requirement is not pyramided on top of existing procedure but worked out as a modification of present accounting. For example, an inventory control and cost system recently adopted by a wholesale dry goods house secures as a by-product other information now being compiled by a staff of five people. By eliminating this work the new system is more than paying the cost of installation.

Many of the abuses and losses in distribution cannot be remedied except by the action of the manufacturer. The manufacturer has a double problem and responsibility in the field of distribution. He has his problem of distributing his own product plus that of knowing the problems of his intermediate distributors and assisting them to fulfill their functions.

The highly important factor in any trade is the manufacturer's policy in selling to different classes of customers. In industry after industry it has been found that the manufacturer has disorganized his own distribution system by selling first to intermediate distributors and then going beyond them to sell their best customers. This practice has been noted in tires, storage batteries, face brick and other building materials, and Mazda lamps. Such a practice cannot permanently expend the market for the manufacturer. It greatly increases his own selling costs and those of his wholesale and retail outlets. Furthermore, by placing him in direct competition with his own customers, it creates an enormous and accumulated burden of ill-will. Manufacturers have been very ready to give quantity prices in order to maintain mass production. One of the greatest manufacturers in the country gave personal expression to the fallacy, "We must keep down our overhead at any cost."

The manufacturer, through his interest in production, has been blinded to the basic importance of merchandising. After all, his function, like that of the wholesaler and retailer, is to buy and sell merchandise. His success must be founded on placing customers and commodities in contact with each other. He must procure commodities which the customer wants and find a means of placing them in the hands of the consumers who want them. Thus the maintenance of his market, of good-will and of an orderly system of distributing his products is of even greater importance than the process of manufacturing. As the manufacturer becomes aware of this fact he tends to take a new point of view toward quantity prices and quantity discounts. He has been willing to give these advantages for volume of sales alone. It is time for him to consider whether a particular quantity purchase actually means quantity efficiency of operation and provides a quantity profit.

The same conclusions can be drawn for the manufacturer as have been set forth in discussing the wholesaler. If he is attempting to cover more than his logical territory he is losing in more ways than mere dropping off in volume on the fringe of his territory. He will find, like the wholesaler, that sales cost mounts and credit risks become greater in this boundary territory, while customers buy only those items especially well supported by advertising or offered at a price sacrifice. The small-order problem is again largely a small-customer problem. This situation is multiplied many times for the manufacturer when he does not discriminate in the type of dealer served.

Although the manufacturer is the furthest removed from the customer in the system of distribution, he has need for definite information about customer demand. A typical case is with regard to packaging. The manufacturer can discover from his wholesalers and retailers what is the most economic number of cans to be put in a case. He can only discover from observing the use of his products by the customer what should be the contents of a can. Matters of flavor, style, quality and price necessitate detailed information of consumer needs for the manufacturer. His investment in products is a more critical one because he gives them definite shape and character, and by making materials salable for one purpose removes them from the available supply for all other possible purposes. The wholesaler and retailer can make his adjustments more readily since he merely carries a line from which the consumer selects and can be guided by those selections in his further purchasing. Mere sales are not so conclusive for the manufacturer, because he may not yet be making the product which the consumer would consider most suitable.

In the same way as with the wholesaler and retailer, there are possible economies for the manufacturer in the physical handling and selling of merchandise. Like the wholesaler, he may profit from less sales effort and more contact, while regional warehousing of a co-operative nature is being offered in the food industry as an answer to the manufacturer's handling problems.

CHAIRMAN HARTMAN: Are there any other questions? If not, we will pass along the next number.

At this time I shall introduce Mr. Charles Meister of Fairmont, Minnesota, on the subject of "A Suitable Uniform Trade Name for Whole Grain Corn." Mr. Meister. (Applause.)

A Suitable Uniform Trade Name for Whole Grain Corn

By Charles Meister
Fairmont, Minn.

A YEAR ago at this meeting Mr. Ralph Brown and myself were placed on a committee, with Mr. Brown as chairman, to investigate the possibilities of establishing a trade name for whole kernel corn. It is not possible for Mr. Brown to attend this meeting and make this report, so in his absence I will endeavor to give you the information found available on this subject. He has not had an opportunity to go over the material I have here, so it will not be in order for you to hold him in any way responsible for this report if it, in any part or in general, does not coincide with your own ideas.

DR. W. D. BIGELOW
Chief, National Canners Laboratories.

At first one might think that this problem was merely the choosing of a satisfactory name to be registered and used on whole kernel corn. This in itself would be quite a job, but there are more things to be considered, such as just what varieties this brand would be applied to, haw it would be appied, who would use the brand, who would decide the users, what quality it would apply to, how to control and designate the quality, etc. All this was given a lot of thought, and during the past season many persons interested in this product were interviewed, but very few definite ideas were obtained. A short time ago we decided to send a circular letter to fifteen of the packers of whole kernel corn to try to get some pointed questions answered. In this letter we asked the following questions:

1. Are you in favor of establishing a trade name for whole kernel corn?

2. Would you be in favor of including all varieties under one name or would you prefer to keep the variety separate.

3. Do you have in mind any plans for holding up the quality of the corn which would be placed under this brand?

4. Do you believe it would be advisable to establish a trade name and not have some definite method of system established whereby the quality would have to be held up?

5. Do you have in mind any name or brand which might be used on this product?

Nine answers to the fifteen letters sent out were received.

In answering the first question most canners were in favor of a name or brand.

The second question, which inquired as to whether all varieties should be placed under one brand or whether each variety should be named separatly, the answers indicated that each variety should be named under the brand separately.

The third question referring to plans for holding up quality was passed over by most writers, the others stating that they

did not know of any method of holding up the quality. Two canners stated that it should be stated definitely on the label whether the corn was fancy, extra standard or standard.

On the fourth question, concerning whether it would be worth while to establish a name and not have a definite system or method of controlling quality, it was naturally agreed to that this would be useless.

The last question asking for suggestions for a name received some rather interesting answers. Six of the nine letters received stated that the name "Whole Kernel" was a good name to use for this product. The other three letter did not answer the question.

It might be well here to recall some of the ways in which this problem has been handled with some other food products. We know that grain of all kinds is bought according to definite well understood standards. Ice cream is not, each manufacturer putting up the product according to his own ideas, the only regulation being on the sanitary conditions of handling, the wholesomeness of the raw products and better fat content. Flavor, color, texture, etc., can vary to any extent, each manufacturer selling under a different name.

The walnut growers of the West have an association and a brand or name is put on every walnut of a well defined quality. If we buy poultry, meat, etc., we depend entirely on the reputation of the packer for quality. If you want a fine tender steak you can't be sure you will get one by ordering it any place; you go to the place where they have a reputation for selling the steak you have in mind. The government guarantees the meat to be free from disease and prepared in a sanitary manner, but the tenderness and method of cooking and flavor cannot be specified or guaranteed. The fruit growers of certain sections have their organizations and control certain brands which go on articles of well defined quality.

Bread is an article which varies with the baker. Of course the law specifies certain things as to weight, purity of raw materials, sanitary conditions, etc.; but when it comes to flavor, color, texture, etc., in other words, the things which make up the quality of the product, these things are dependent on the individual organization putting out the product. Candy is another product which we buy by brand and rely on the reputation of the manufacturer for the quality of the product. Each reputable manufacturer has his own ideas as to just what constitutes the piece of candy and governs himself accordingly.

You may say that a lot of the products mentioned are getting too far away from corn to have any bearing on the subject, but if we stop and consider butter, we have a product which should have some bearing on the subject. The butter makers have done some fine work in the past few years, and if you know butter and buy it on grade you know exactly what you are purchasing. Butter is not any easier to grade than whole kernel corn, it is probably much harder. If three men qualifying as butter judges grade a series of samples of butter their individual grades must agree within three quarters of a point or the grade does not stand and the tub in question must be regraded. If you buy butter of 93 grade you can be sure of the quality you are getting.

We have been trying to give you a few pictures of various food products and how they are handled. You know the various industries which are the most prosperous. There are two outstanding means for marketing a quality product profitably. If one of the large manufacturers can control his quality and sell this through advertising, then the smaller manufacturers must form associations and by iron-clad methods control quality and sell under a common brand which guarantees the consumer a product of merit and makes possible selling by large scale advertising for the small manufacturer. The consumer in this way is guaranteed a uniform quality product under one brand. As it is now, we have as many variations as we have packers. At present in the canning industry we do not have the necessary machinery to grade and supervise the various packs, but the problem does not appear impossible.

In conclusion, we wish to recommend plans of procedure for the present and for the future which we hope is not far away. For the present our recommendation would be to use the name "Whole Kernel" with the variety and quality stated on the label of each packer. This is what most of the packers are doing now and from the replies received to our questions, is the plan most packers wish to follow. This will at least make a uniform label so far as information given on the label is concerned.

In the future, as we see it, very little can be done in regard to establishing another name until we have some organization to protect the quality of this label. If an organization of some kind can be brought about whereby a name can be used under their control and quality of all goods shipped under this brand be checked or graded in a laboratory of this organization, then we can accomplish something. Another method, if it were possible to work out, would be for a person or persons under the supervision of the National Canners Association and at the who kernel packers' expense grade the corn to be placed under this label. However, it is useless to establish a brand and not have some method of guaranteeing the quality.

We are dealing with a special product and at present must depend on the individual packer to take enough pride in his work and the merchandise he is marketing to see that only the finest is sold at whole kernel. The buyer should realize that it costs a lot more to pack this corn than cream style. He should discriminate against packers offering whole kernel at a low price, knowing that a quality product cannot be produced at anything near the cost of cream style. If the packers who are now packing this product will all help make the name "Whole Kernel" stand for something worth while it may not be necessary to go farther with the establishment of a brand.

CHAIRMAN HARTMAN: Mr. Meister, that is a splendid report. I hope that whoever my successor is he will continue Mr. Meister as Chairman of this committee to continue this work, not only on the trade name but on the other thoughts that he has developed in this splendid paper.

It is a pleasure to present at this time Mr. Lawrence G. Warder of the Hartford Insurance Company of Chicago, (Applause.)

MR. LAWRENCE G. WARDER (Hartford Insurance Company, Chicago, Illinois): Perhaps I might say that being a native of Kentucky it is appropriate, at least, that I should be called upon to make my comments before the Corn Section. Kentucky at one time had quite an enviable reputation for putting up corn products, but that has been more or less handicapped in the last few years by government legislation. As I am not familiar with any brand of the products canned, I shall try to confine my comments entirely to crop hazards. I shall read you a paper that we have dealing with that subject.

Crop Hazard

By Lawrence G. Warder
Chicago.

THE development of the canning industry has been most remarkable and to have attained its present importance many obstacles have been overcome. Yet it is a business confronted with more than the ordinary hazards, one of which is what is commonly referred to as a crop hazard.

In a recent issue of "The Canner" there appeared an article written by Mr. Reed M. Roberts dealing in part with this subject, he commenting as follows:

"We also carry insurance, such as fire, tornado and boiler, which provides against their destruction, but are we not overlooking a form of insurance more far-reaching than any of these risks to our physical properties? What I have reference to is crop-hazard insurance. Try to buy some from an old line insurance company, and if they will write it at all see what the rate is. Evidently we are a specialized industry, with an excessive amount of risk, for the rates for this class of insurance are prohibitive."

With a full realization of the many perplexing problems of crop hazard or crop-hazard insurance, I shall with your permission confine myself to a memorandum written with reference to this subject by President R. M. Bissell, of the Hartford Fire Insurance Company. Mr. Bissell comments as follows:

"This Company has experimented very thoroughly with the undertaking of insuring producers, loaners, commission merchants and others against loss or damage accruing to them by reason of destruction or failure of crop over a period of about twelve years. During this period almost every kind of crop has been insured at one or another time by us, and despite the most conscientious and ingenious methods of drawing contracts which we were able to think of, and in the face of charges which were so high as to be burdensome upon the industry, we have never been able to avoid a serious loss. One or two years we had a profit but taking the period as a whole into account our losses have been very large indeed.

"However, from our experience there are certain principles which stand out as necessary bases we believe for any scheme of crop insurance. These are:

"1. That crop insurance contracts should be so drawn that no claim can be made under them unless there has been such a crop loss as to be really calamitous in its nature. Any system which endeavors to insure an average crop or an average profit from a crop is bound to fail, and if attempted such insurance would have to be written at a rate of premium which would be absolutely prohibitive.

"2. Contracts must be also drawn in such a way as to avoid if possible any opportunity for the filing of claims against the insurer which arise out of fluctuations or changes, sudden or seasonal, in market prices. It often happens that on account of simultaneously successful crops of one kind or another—potatoes being a good example—a very large and healthy crop may not pay expenses. We have seen years when certain fruit crops were not even gathered by the farmers in some sections of the country.

"3. Undoubtedly contracts would have to be drawn whereby a certain fraction of every proper claim should be borne by the assured. In other words, unless there is a complete partnership between the insurance company and the assured, crop business becomes a practical impossibility.

"4. The amount of insurance granted per acre or per unit of any kind must be so small that in no case shall it exceed the actual cost of growing and harvesting the crop to be insured. In fact, in most cases the amount of insurance granted ought to be considerably less than this cost.

"There are some other underwriting considerations which would apply to any kind of a crop the insuring of which was undertaken, namely, that there must be a large enough number of contracts covering the crop under consideration in widely different territories to enable the insurer to have a spread which will give him an average, so that an unfavorable season in one state or even two or three adjoining states, as so frequently happens, will not necessarily indicate a ruinous year for the crop everywhere.

"There are many other considerations which must be taken into account when a crop insurance contract is written. The principles and suggestions which I have outlined above are made by no means altogether to protect the interest of the insurer but also to protect the interest of those who desire to carry crop insurance. Our experience has repeatedly shown that unless the possibility of recovery under crop insurance is very carefully limited, the cost of insurance is so great that neither the grower nor the dealer can afford to pay for it. So far as the grower is concerned, in our opinion the function of crop insurance if it could be properly worked out would be to grant such an amount of insurance as would in the case of crop failure provide the grower with funds necessary to enable him to go ahead with his crop for the next season. Any attempt to protect either the farmer or the commission merchant or the dealer against loss of profit is quite out of the question, owing to the number and nature of the hazards to which all agricultural undertakings are subject. It has been said that the farmer is the greatest gambler in the world, and our experience with crop insurance has clearly shown to us the conditions which inspired that saying.

"I have stated the most discouraging features of our experience with crop insurance first in order that the situation might be fairly disclosed. We have found during our efforts to write crop insurance that even the best informed persons, including the heads of agricultural colleges, graduates of such colleges, experienced commission merchants, fertilizer dealers, distributing agents and canners have often failed to understand the very great difficulties involved in the business of insuring crops and the very great complications which arise in the settlement of losses and to have an adequate comprehension of the possibilities of loss which have proved to be almost endless. Several times in our experience it has happened that when we thought we had arranged a form of contract which was satisfactory to our assureds and which apparently protected us against ruinous loss in view of all the experience that we had theretofore had, an entirely new condition would arise concerning a particular crop which would inflict upon us and upon the producers calamitous losses. So that in approaching the consideration of crop insurance it must be realized by all concerned that the problem involved is a most difficult one.

"It has always seemed to me that the operations of canners provided a very favorable opportunity for trying out crop insurance and it is undoubtedly true that some form of crop insurance is almost essential for the canners in order to protect them against the occasional disastrous losses which they are called upon to suffer, their business being such that they must each year undertake negotiations with producers and sometimes with buyers which involved occasionally large advances and always considerable investments and which are subject to practical destruction by any one of a number of causes which may interfere with the proper ripening of the crop in adequate quantity and its sale at a price which will enable them to avoid loss. The question of sales price or market price is one of the most difficult factors which enter into crop insurance. Theoretically, crop insurance has nothing to do with it. Practically, the matter of insurance and price cannot be completely separated. In a year of high prices half a crop may produce a very handsome profit, while in a year of over-production a bumper crop of first quality may involve no profit, or even a loss.

"This is the oustanding feature which makes crop insurance so difficult. We have insured several canners under what seems to be contracts fair to them and to the company. Unfortunately our assureds in that industry were so few in number and the individual values involved were so large that several severe losses which were incurred called for payments on our part amounting to many times the premium we received. It might be possible to work out some plan of crop insurance with a large and responsible body like the National Canners Association which would obviate many of the difficulties which we have found hitherto to exist in connection with this kind of business.

"Needless to say, having had more experience with this class of business than any other company and being very mindful of the importance of offering to our patrons every kind of insurance which their business needs demand, we should be only too glad to give this matter very careful study in conjunction with several representatives of the canning industry. Possibly some plan based on a different method of compensation from that which we hitherto have employed might be worked out which would give the canners sufficient protection to warrant them in carrying insurance and at the same time put us in a position where we should not suffer calamitous losses. It is out of the question to expect that this business could be conducted on a basis which would result in large profits to the insuring company. The industry will not, and probably should not, pay premium charges sufficient to bring about any such results."

CHARLES G. WOODBURY
Director, Raw Products Research.

I wish to thank you for this opportunity afforded to place before you the viewpoint of President Bissell, as regards this important subject.

MR. LAWRENCE G. WARDER: If it would not be entirely out of order, Mr. Chairman, I should like to suggest that through the proper procedure a committee of your membership be appointed to deal with this situation and we will be more than glad to have them give us what they know and go into the subject very thoroughly with them. Other than that, I think we can only offer to you our appreciation for having had this opportunity afforded to place before you the viewpoint of the President of our company. I thank you. (Applause.)

CHAIRMAN HARTMAN: Thank you very much, Mr. Warder, for that able presentation of a subject of great importance. Are there any questions that you would like to ask Mr. Warder in the few minutes we have remaining?

I think most of you will agree that Mr. Warder's suggestion concerning a strong, going committee of experienced men in the industry working with Mr. Warder and his associates might work out something decidedly worth while.

MR. SEARS (Illinois): I should like to ask Mr. Warder if he feels as though the distribution of risks in his previous experience was a fair condition.

MR. WARDER: You mean that our small distribution outweighed our liability and did not give us an opportunity to give it a fair test?

MR. SEARS: I am asking if you feel that your distribution of risk was in a satisfactory territory.

MR. WARDER: It was not spread largely enough. It did not cover the territory. It was not the individual risk; it was the fact that they were too congested, as we might term it, in the insurance business.

CHAIRMAN HARTMAN: Are there any other questions? The Chairman would be glad to entertain a motion that we recommend to the President of the National Canners Association the appointment of a committee to meet with Mr. Warder and his associates at some convenient, early date.

MR. E. G. COVER: I will put that in the form of a motion.

The motion was seconded, put to a vote and carried.

CHAIRMAN HARTMAN: At this time may we hear from the quartette?

Singing by the Rainbow Quartette.

MR. DICKINSON (Illinois): I move a rising vote of thanks to these boys.

The audience arose and applauded.

CHAIRMAN HARTMAN: About three years ago in the Sherman Hotel at the Western Canners meeting I heard what struck me as the most worth while address I had ever heard from any platform. In the meantime, many of you canners have heard the same speaker in different parts of the country, from the Atlantic to the Pacific. This same speaker has done much research on the problems that relate to our industry at the distributing end, and I am quite confident that Mrs. Bess Gearhart Morrison in her address today on the subject of "Yesterday" will give us something very much worth while to take home. Mrs. Morrison. (Applause.)

From a Woman's Viewpoint

By Mrs. Bess Gearhart Morrison
Lincoln, Nebraska

MR. HARTMAN was so kind when introducing me to say that you had the same speaker; that is only half of it, Mr. Hartman, you have the same old speech. (Laughter.) I know nothing of your books; I dare not read them for fear I should quote; and so I just chatter about a woman's viewpoint and it is the same old speech. But today, we thought we would take the topic "Yesterday," and from that I am going to talk. I want to thank that wonderful quartette for preparing the way with their music. Pennsylvania boys—I am Pennsylvania Dutch—Gearhart. (Laughter.) I want to quote a little heart-sickening verse which comes to me:

> Backward, turn backward, O Time, in your flight,
> Make me a girl again just for tonight;
> Turn backward, O Time, with your sorrows and joys,
> And let me have one of those cute Pennsy boys.

(Laughter and Applause.)

In coming to you today, I am going to talk for a little while from our side, and there is such a gulf between your side, and the efficiency to which you have carried your side of this great game, and ours, because we women are so scattered. I am wondering how you are going to get the wonderful efficiency for which you have fought and prayed and paid—and how—to us, to me, when I step to the corner grocery to buy a can of corn.

The first thing which came to me this morning when I reached this floor was the fact of a man standing back there wondering how to get the society women to use corn instead of so many peas. Hurrah! for the corn—but try and do it. (Laughter.) See the years you are going to have to talk before Mrs. Jones quits using peas as a garnish because Mrs. Somebody in New York uses peas! Oh! we are funny, we women; we are not so funny either when you come to sell us, are we? But it is just there and you have to meet it.

I thought I would tell you a little story this morning such as I would tell a group of women if I were trying to get them up to a certain point to sell them. I am going to ask you to go back to the day of this dress. Isn't it pretty? (Laughter.) Isn't it nice? I wish I could wear a dress like this all the time—and still, what in the world would you young fellows do in a Ford coupe? (Laughter.)

But yesterday, when we women wore this kind of dress and worked and fought for time to sit in the parlor—parlor?—Mr. Hartman, do you know what a parlor is? No, you do not, do you? You are too young. Where is Mr. Roach? (Laughter.) Mr. Roach knows what a parlor is. I wore this dress for Mr. Roach. (Laughter.) A parlor, you young fellows—ignorant—is not a room; it is an institution. There is nothing in this world that looks like it. There is nothing in this whole world that smells like a real, old-fashioned parlor.

I will tell you how I know so much about parlors. When I was ten years old my Methodist preacher father scraped up money enough (I will never know how he did that) out in Nebraska (you know Nebraska; that is where Morton Steinhart comes from) to send my mother and the four children back home to Pennsylvania for Christmas—and all the rest of the winter until we boarded the carfare out—you know. (Laughter.) It was there that I saw parlors. If I just had time this busy morning I could talk from now until two o'clock telling you about a parlor. Oh! a parlor is a beautiful place; but the one thing I must tell you is that a parlor is the coldest thing in this world—except the spare bedroom. (Laughter.) They did not open up the parlor for every occasion, O mercy, me, know. It would not have been a parlor if they had. They opened the parlor weddings and funerals and Sunday evenings—if the young man looked serious. They did not open up the parlor for triflers. (Laughter.)

Oh, the parlor was a beautiful place! Do you remember the rag carpet? I will bet you do not. They had three kinds, body Brussels—body Brussels, they said it like one word—three-ply ingrain, green on one side and red on the other, or else they had a glorious, homespun, home-dyed, wool-warped rag carpet. They did not slap it down the way we do now and call it a carpet, with a cold, hard, slippery, unsympathetic floor. The laying of a carpet then was as complicated as a lodge ritual is today. First, they put a thick layer of paper, then a nice, even layer of clean, crackly straw, and then they tacked the carpet down, and it was springy and comfortable — and full of germs — (laughter) and we lived on them.

In one corner of every parlor there was a whatnot. Do you know what a what-not is? They still have them over in Ohio. I will bet Mr. Stoops knows what a what-not is. I will tell you how they made a what-not. They took three steel rods about that high (indicating) and three three-cornered shelves about that size (indicatin) with a whole in each corner. Then they took a lot of empty spools—conservation—nothing new—and put those spools on the three rods up to about there—a shelf, some more spools, a shelf, some more spools, and a shelf. They varnished that thing and set it in a corner. That, young men, was a what-not.

On the top shelf of the what-not there was a big glass dome covering a white wax cross, with a green wax wreath around it. On the next shelf there was a great big basket of red coral and sea-shells. You could hold one of those sea-shell to your ear and hear the ocean just as plainly. Do any of you remember that white glass dish, with two white hands put together this way (clasped), with a twisted grapevine running from one thumb to the other to make the handle. and the grape leaves over here? Maybe you kept yours for jelly or for pickles when there was company; we kept ours for the name cards.

Do any of you men remember the name cards? I had name cards. Oh, they were bold! Oh. dear me, but they were bold! I wonder sometimes what our high school young people would think of anybody as bold as a name card. A young man would have his name written with green or purple ink, with great big, bold, bad flourishes and heavy, suggestive shading. There would be a right-hand and an arm pasted over the name, with a bouquet of flowers in the hand, and a little blue ribbon around the wrist, and on that ribbon a tiny little card which said: "From a true friend." Was that not bold? (Laughter.)

Then, on the other shelf, oh, there were big and little and middle-size vases—they say "vase" now, but we said it the way it is spelt—and great big mustache cups and saucers, and little China dogs, pigs and elephants that somebody had given you. You did not know what to do with them so you put them on the what-not.

In the center of the parlor was the stand table without any leaves, a great big black walnut stand table with a motley brown and white marble top. That marble top was not all covered up with pictures of movie actresses and bathing beauties. Right in the geographical center of the stand table was a blue and yellow crocheted wool mat, with pineapple pattern, and on that mat there stood the pride of our parlor—a great big red, glass globe lamp. Oh! that was the prettiest lamp. It smoked, but we always lighted it when there was going to be company, because it made everything look so cheerful.

We got our lamp, by the way, by saving coupons out of Arbuckle's coffee. (Laughter.)

On one side of the lamp, laid right square with the world, was the family Bible, which at that time had not gone out of style. On the other side of the table was the family album, the

opening wedge to all conversation. We never talked about the neighbors, the preacher's wife, or the weather until we had gone through the album.

Then, the walls—Oh, the pretty things! I could take an hour going around the walls of grandmother's parlor. The mottoes—you young folks do not know what mottoes are. They were worked with colored ciphering on cardboard. I know Miss Atwater knows what mottoes are. Over one door was "God Bless Our Home;" over the other door was "What is Home Without a Mother?"

Then we had a great big picture of George Washington crossing the Delaware. Remember that picture of George standing up there so stiff and straight? I used to wonder why he did not rock the boat. We had a good old-fashioned group, a baker's dozen, and then a large family portrait with a finger ring on the first finger, and then the marriage certificate with the two hands cut right square off at the wrists. We had so many pretty things—even a hair wreath. My, but the parlor was lovely!

It is a pity that the women of yesterday could not have spent more time in the parlor. No wonder they kept it sealed from the sunshine and the dust. They did not have time to clean it. They did not have time to use it, except for very great joys or great tragedies. They spent their time in the kitchen—and how!

I can remember the kitchen in my mother's days when she was preparing to take care of that brood of hungry mouths through the coming winter on a Methodist preacher's salary. Can any of you folk remember the "putting up" time? It spoiled the whole nice summer. The roaring cook-stove, the jams to jam, and the jellies to jell (and sometimes they would not), and the warts to be taken off the cucumbers to make pickles, the gooseberries to be deprived of heads and tails (laughter), the apples to core and pare, and the cherries to pit, but I think the nastiest, stickiest, meanest mess in the old-fashioned kitchen was the corn. They did not know in those days even how to can it at all. Of later years, I have worked and sweated with the brine, with so much sugar and so much salt, and then have had to soak it all out. They dried it, cooked it, and cut it. Of all the sticky messes in the world, cutting off corn is the worst. I know. I was the oldest of the family and I had to do it. Then we had to dry it. I still like dried corn; I do not understand why, but I do. It was a terrible mess.

But you folk have changed all that. I wish you could have done it when they wore dresses like this which would have looked so pretty in the parlor.

I often tell people when they ask me how I can manage a home and a profession that it takes a poker face, a golf wrist, tennis feet, the grace of God, and a good can opener, and that is what I have. (Laughter.)

Right this morning I challenge the Chicago judge who said that can openers were the cause for divorce. I have opened cans of all grades and qualities for the same man for thirty-two years and night before last he told me he loved me—and I believe him. (Applause.) If the man is sitting here who sent me the can opener which "does," I want to see him. I have found two can openers which "do." Gentlemen, I repeat, if you will get a good, efficient, dependable, time-saving, temper-saving can opener into every kitchen, you will increase your sales—absolutely, you will. So, as I said, I challenge that judge. You folk have not helped to increase but to decrease friction in the home.

It seems to me this morning as I look at this great body that it ought to be the simplest thing in the world to increase your sales. I wonder why you have any problems to face, just on the surface. Why, there are 26,000,000 homes. I cannot see how you can get enough cans for these folk to open the way you have talked, but I do believe that your problems are just as imminent as they were five years ago, but you have brought part of them upon yourselves.

I think your first problem (this is just from a dumb woman, you know) is the same thing which other people are facing—the problem of the farmer, the radio manufacturer, the loud speaker, silk stockings, Ford cars, or anything else. You have made things so very lovely that you have raised our high standards, and now over-production is one of the ghosts which is stalking you. I can see just exactly how that would worry you, because, after all, no matter how good a can of corn may be, if it blooms unseen in the warehouse it is doing neither you nor me any good.

I think the other problem is your fault. You have educated us, you have taught us, you have led us to expect and to demand so much of you that instead of drifting during this year of 1930 you have to improve your pack to keep up with the demand which you taught us.

What was that about Shakespeare? "I will better the instruction." You have taught us to be fussy, to demand better things of you because you have told us that you could do it.

The other thing is, how are you going to reach the world? You remember that immortal and immoral Sergeant Flagg was forever "telling the cock-eyed world." Well, how are you going to "tell the cock-eyed world?" You have done wonderful things in your publicity, but I will tell you that you have simply stunned us, and I am using that word advisedly. We have become stunned and dulled to the wonderful things whcih you are telling us in print and over the air.

At first, when the radio began advertising, it just drew me and held me, but now—switch it off. They can do that with the radio so much easier than they can do it with me. The great problem is, how are you going to tell people? I know you gentlemen would be discouraged this morning if you could really face the colossal ignorance (and I use that word kindly) of women. I am just one of them. After all your marvelous organization here and after I sat listening last night at the dinner given by Miss Atwater to those talks and met those people, why, gentlemen, I could not pronounce half the words they used, as they know so much about canning, but how are you going to reach from me down. They could not understand that, and yet, with all your wonderful and inspirational teaching, the average and the below woman will step to the counter and will buy what the grocer suggests—most of them. I have had the same grocer for years and years and years and I just order. I know that Mr. Erb will send me what is right, because he belongs to my church and to my lodge. You cannot get past that with women.

J. RUSSELL ESTY
Western Branch Laboratory, N. C. A.

We women know practically nothing about the size of cans or of the grade of cans. We should be protected by legislation from men who are not as honest as the National Canners, and that is up to you. You surely have the numbers to decide that.

We know so little about packs. When I knew I was coming here, after Mr. Hartman had written to me, I sent out a little questionnaire to 100 women in the Pacific Northwest and asked them: "What kind of corn do you like?" Some of them said, "I do not like silk in it." Some of them said, "I do not like mushy corn." Someone told me of a brand where the kernels were nice and separated. Some said one thing and some another, but never did I receive a right straight-to-the-point answer. We must be helped. We are buying in the dark, and we need you just as much as you need us.

Of course, I realize the corn canners have keen competition from the fresh corn that is sent up here from Texas, and from the dried corn. I am one woman who buys a pound or two every year, but I do not think that needs to cut any figure with you at all, because you can soon prove to me that one of the fine cans of corn, such as I have bought recently, has a much finer flavor than the corn which has ridden hundreds and thousands of miles on the cob to reach Chicago or this country.

I think a finer pack with a real course of enlightenment to women is going to help you do it. Both men and women are

ready to work with their intellects. I do not think you need to bother about the appearance of the can; maybe I am wrong. I read an article recently where they said that women buy with their eyes. I do not agree with you. I think that men and women work, by necessity, with their intellects and play with their eyes. That is what keeps the musical comedies going—the t. b. m. comedies—for the tired business men.

The men play with their eyes. That is what sells a car to a woman. If I were a car salesman I would not talk about the inside of a car; that is not in it. I would talk about the little jimcracks on the dashboard, the "swell" color, or the pretty little silver vanity case in the back seat. We women are caught with our eyes, but for things such as food we are going to use our minds, and I think we need to be convinced.

I think your bulletins and the letters to Aunt Mary by Miss Ruth Atwater are the finest things I have ever seen in my life. I have learned such simple things from them that I should have known, and still Miss Atwater did not humiliate me because I did not know. She just did it in a human, chummy way. I am sending those letters to my daughter, who is a young housewife in her kitchen willing to learn, and those are the girls who are going to patronize you, because they are going to learn in time.

We must have a new method of reaching people. I think the one reason we have been over-shooting in our advertising is that we have forgotten that business may change, that the world may go at leaps and bounds (and, oh, is this not a wonderful day in which to live?), but there is one thing which stands just the same today as when women wore hoopskirts, and that is human nature. We have not changed a bit, and you cannot get by that human, neighborly, personal appeal which the old corner grocery store used.

I do believe, and I am not stating this unkindly, that advertising this year must be down closer to the ground. We have actually over-shot our mark in advertising. I am not meaning to be unkindly when I mention names, but I want to tell you something which was so vivid to me. Just a few evenings ago in Seattle I saw a moving picture—"A Show of Shows." You remember it. In that they had a funny little blind-fold test. A woman said to her husband, "What advertisement was that?"

"Oh," he said, "that was a cigarette." A cigarette—shades of Paul Whiteman and Old Gold—think of what they have spent to have that man tell his wife on that blind-fold test that that was a cigarette!

In the same show they had that funny little slogan about, "If your best friend won't tell you, why should I." A group of young people, sitting where I could hear them, talked, giggled and laughed about that new word to America—halitosis—but, gentlemen, they said, "That is a toothpaste ad." (Laughter.)

You see, we have stunned America with the force of our advertising, and we have to get this thing a little more simple, a little more human and unique. You must not forget that. It is such a simple thing. Do you know, I believe it is the easiest advertising which costs the least.

I came in here night before last on a new train. I had thought to come on a rival road from Lincoln, and then they told me about this wonderful new train out of Lincoln. So I went down and took that train. The passenger agent came down and seeing me took me to the lounge, explaining how I could use the telephone for nothing. When I reached Omaha I plugged in and telephoned to a friend up town. It did not cost me a cent, and it did not cost them a cent. Oh, say, how I liked that! That was only half of it. When I stepped off the train a redcap was at the train. He was calling Mrs. Morrison. "Oh, dear, there is a telegram," but it was just a redcap. He had been wired to meet me and to see that I got into a taxi. Of course, gentlemen, I have been taking taxis by myself for seventy-two years, but, oh! you do not know how I liked that courtesy. Why, I just purred. Chicago was not cold to me; it was all sunshine because that redcap came and took me to the taxi. That wire did not cost that road one penny; they have their own wires. It did not cost them a cent, because I paid the redcap, but it was a little personal attention—Oh, how I like it! Do you think I would ride on that other train now? No! Not on your life! (Laughter.)

I stopped recently at the Davenport hotel in Spokane. Is anybody here from Spokane? Do not be ashamed of it, it is a nice town. They have the loveliest hotel there. Oh, my, but that fellow was a shark! Did you ever go to the Davenport hotel to get some money changed? I took all the money I had and got it into one bill so that I could walk up there and throw down a twenty to see what they do. Do you know what you get for change from the Davenport hotel? You get a bill that has never been touched by human hands—just like crackers—a lovely, new, crisp bill right from the bank, and the silver money has been given a bath so that it shines like new and is fit for me to pick up. Is not that a subtle compliment? That fellow has been doing that for years.

In Europe they talk about the new bills and the brand new silver, and that does not cost that Davenport fellow one penny. The bank does that for him.

Oh! these little, new, different things which please the women. And, gentlemen, you must please the women. You may talk about your scepters, you may talk about peace parlies, but the hand that rules the can opener is the hand that rules America today. (Laughter and Applause.)

So, as I told you in the beginning, I just have the same old talk. When anybody asks me to talk for them now, I say, "Choose your title, I have my speech." (Laughter.) It is just the same old plea. I know so little, nothing of home economics, nothing of chemistry, nothing of dietetics, but I feed a family. We need the home economics, we need the laboratory, we need all this beautiful organization which is standing back of you, and I want to compliment you upon it. But do not forget me and all my sisters. Keep us wed to you in a human, simple, understanding way.

I have so enjoyed being with you. Oh, I do like a convention. I have missed just one thing here, Mr. Hartman, and that was the quartette. I know the psychological moment when you start to sing "Sweet Adeline." It is not quite time for that yet. When this quartette sang today I felt so at home. If at any time there is anything which you men have to tell me which will help me other than by reading technical books, I want to know it. I read your advertisements; I love them. I almost shed tears in Paris last summer when I found a double spread in the Saturday Evening Post of your stuff and Red Hart looked like a sweetheart to me when I was over there. I read them, but too many women leap through the magazine, hunt up the third installment of "Burning Kisses" or the tenth chapter of "How to Develop It," and do not read the high-priced advertisement.

So I beg you, as you soar and grow, to keep your feet on the ground, because that is where so many of your can openers live, and you must not forget us. Mr. Hartman, I thank you. (Applause.)

CHAIRMAN HARTMAN: Mrs. Morrison, we are very grateful to you for the address you have given.

Is the Nominating Committee ready to report?

THE ELECTION

MR. E. G. COVER (Maryland): We found we had a hard job to duplicate this program. We have done the best we could. We are putting in nomination Mr. J. R. Wheatley of Maryland and Mr. H. L. Morris of Nebraska. I make a motion with that.

MR. SEARS (Illinois): I move that the report of the committee be accepted and approved and that the Chairman be authorized to cast the ballot.

The motion was seconded.

CHAIRMAN HARTMAN: You have heard the motion. Are there any other nominations to be made?

The motion was put to a vote and carried.

CHAIRMAN HARTMAN: The vote has been cast and the Chairman and the Secretary are elected. Are they in the room? Mr. Morris. (Applause.)

I think practically all of you, no doubt, have seen and heard the subject of Simplification of Containers discussed. Is there anything you want to do with reference to that subject at this time? Do you want to make any recommendation to the Board of Directors or to the Administrating Council to handle this?

MR. E. G. COVER: I move that we favor this recommendation and refer it to the Board of Directors for adoption.

The motion was seconded, put to a vote and carried.

CHAIRMAN HARTMAN: Is there anything to come before the section before we adjourn?

The meeting adjourned at twelve-ten o'clock.

Beet Section

Thursday Morning, January 23, 1930, 10:00 A. M.

J. P. Kraemer, Templeton, Wisconsin, presiding.

THE meeting of the Beet Section of the National Canners Association convened at 9.50 o'clock, Mr. J. P. Braemer, Templeton, Wis., presiding.

CHAIRMAN KRAEMER: First, we want to select a Nominating Committee. I am going to call on Dr. Clark, of Waupun, Wis., Mr. Holt, of Oregon, and Mr. Lutz, of New York.

CHAIRMAN'S REPORT

THERE are just a few things I want to stress in my report. We have had such an even tenor in our affairs this past year that nothing serious has come up that has marred our beet industry so far as 1929 is concerned. Those of you who have looked over their census report have seen how our baby is growing, and it grew, in fact, a little bit more than our health chart indicated. I know in our family we have youngsters all the way from one to eight years old, and my wife consults the health chart regularly to see that they stay reasonably close to the prescribed schedule. So if you consult this health chart you will see we run over a little bit, but I don't consider that serious; the health chart can stand a little excess weight. Our infant here seems in very healthy form. Now what we want to do is not over eat; although we may still stay a little over our prescribed weight limit, we may still remain healthy enough to remain upright.

In common with all canned foods, it seems our beet consumption has been increasing. In fact, you will find a healthy growth in everything except corn, but especially in beets. The reason that our pack seems to be 40 per cent greater than last year is that we ran into the season with bare shelves, and the price has been a little bit more reasonable this year than last, which makes for greater consumption. Of course, some stocks are still up, but that is not alarming, because it is still eight or nine months before the new pack will be on the market.

I should like to make a few suggestions, if I may, regarding a little publicity that we may have for our beets which won't cost us a great deal and may be of considerable help.

We have adopted this plan for all our best labels, and all our pea labels. I have always been impressed with the folly of having a reproduction of vignettes on both ends of the label, so we have chosen a half-dozen proven recipes, ones that are very nice and ones that make friends for beets, and we have inserted a little panel in place of one of the vignettes on our label. Each recipe is altogether different from the others, so that if the housewife tries one and finds the recipe good, she will, undoubtedly, be induced to try the others. I should be glad to give you copies, although you can probably get better receipes and as attractive as these. I am impressed with the possibilities there, because there are six different ways you can prepare beets. The housewife is naturally looking for variations in her methods of preparing vegetables, and it would seem, as she reads this, she would be induced to buy more canned beets.

Another item I should like to bring up for your consideration is the publishing of a pamphlet. You know the Canners Association has been publishing various pamphlets for peas, corn, and so forth, and I think we should get out something on beets, so in case a call comes in for this sort of thing, we will have the necessary material on hand. I know we use quite a few of the other pamphlets in supplying calls from various places. I wonder if you won't endorse having the National Canners Association draw up a pamphlet for us, clarifying and standardizing sizes, counts and methods of cuts in this thing, so that the country as a whole will have something to go on. I know I have been called on at least twenty-five times this past year for counts and I think such a pamphlet, if we could get it, would help in this and also give the boys from other states something to standardize operations on.

I have been quite impressed with a survey indicating twenty-eight states packing beets. You see that is quite in variance with the corn and pea states and with people from twenty-eight states, it is wise to have some central medium so they can regulate their actions so we won't have different styles of cut and whole beets to the extent we have packers.

If you think this worth while, I should like to have such a motion, and I would try and help in getting the information from different canners of the country. What do you think of this plan? Do you think it worth while?

SECRETARY SHANNON: I think any publication that the N. C. A. can put out to assist us in standardizing counts would be mighty helpful in the beet packing industry. We certainly are at great variance at present, and I make such a motion.

The motion was seconded.

CHAIRMAN KRAEMER: Is there any discussion? Have any of you any ideas you think should be included in the pamphlet?

DR. T. O. GORES: Mr. Chairman, is it your idea that we get the material for the National Canners Association?

CHAIRMAN KRAEMER: The National Canners Association will be interested in having the Beet Section adopt something in the way of standards.

JOHN P. KRAEMER

DR. GORES: You mean we will give them the information and they will publish it for us?

CHAIRMAN KRAEMER: Yes, the information will have to come from this Section.

Are there any other questions? If not, all in favor of having the N. C. A. publish such a pamphlet signify by saying "aye"; contrary. The motion is carried.

DR. GORES: Mr. Chairman, is it your wish to have a committee take care of that, or let the officers do so?

CHAIRMAN KRAEMER: I think the officers would be the better plan; it gives them a little activity. Of course, we would be glad to help.

You will notice by your programs that we have two representatives of the American Can Company with us this morning. That is entirely my fault. Up to this year we have been getting our cans from the American Can Company, and, therefore, I had a little leverage and felt at liberty to dictate a little. So last year, when I was appointed Chairman, I thought it wise to start early, as to get things of an interesting nature, you must start in advance.

We have with us this morning Mr. A. D. Radebaugh of Baltimore, who has a connection with the American Can Company which he can explain better than I probably can, and I know he has something of interest for us. Mr. Radebaugh.

MR. A. D. RADEBAUGH: He just said he had two representatives from the American Can Company here. If I look as I feel, after last night, I know you will agree there is only one, and I haven't seen him yet.

I sort of hesitate to talk very much about the growing of beets, because in this Section in 1925 and again in 1926, we had our good friend Professor Star, who talked to us on beet growing: the soil, various effects of color, zoning, white rings in beets, and so forth. And when he got through with some work there, we found out we didn't know how it all happened. That is pretty much the case now. Why you get zoning or white circles in beets is apparently, to a certain extent, carried over in the seed by improper or not very careful selection; also the soil seems to have quite an effect on it, so we don't know much about it.

I am going to give you what I have in mind on the fresh beet industry and later you will have an opportunity to ask questions.

Beet Production

By A. D. Radebaugh
American Can Company, Baltimore, Md.

SOME time ago Mr. John P. Kraemer, Chairman of the "Beet Section" asked me what I knew regarding the growing and marketing of fresh beets, and if I would appear on the program and report some observations.

The growing of beets for canning, including soil types, fertilization, planting, culture and varieties, has been so thoroughly discussed by our good friend Professor George Starr before this section in 1925 and again in 1926, that I hesitate to dwell upon this phase of beet growing.

Several years ago a very thorough survey of the fresh vegetable industry was completed. A partial report of this survey was given in 1928 before the Wax and Green Bean Section of the National Canners Association. At that time canners were apparently more interested in the production of snap beans, tomatoes and peas for the fresh market. However, during the past two years a number of canners have become interested in the production of beets for the fresh market.

Complete statistics showing planted acreages, yields per acre and total shipments for fresh market beets are impossible to obtain.

The most important States producing beets for the fresh market are Texas, Louisiana, Florida and Mississippi, and the Bermuda Islands.

Reports for Texas, 1930, indicate an acreage similar to a year ago or about 3,000 acres. In 1922 the railroad records show that 31 cars of beets were shipped from the Lower Valley and in 1929 about 955 cars. In addition to the beets that were shipped in solid carloads a considerable amount of beets moved in cars containing carrots and beets and mixed vegetables. The estimated production in 1922 was placed at 30,000 bushels and 624,800 bushels in 1929.

Louisiana, while an important state producing beets for the fresh market, shows greater variation in acreages planted from year to year than Texas, as follows:

Year	1924	1925	1926	1927	1928	1929
Acreage	433	1,370	3,340	5,790	4,300	3,100

The time of planting is about the same for all States mentioned, being October, November, December and January. Harvesting of crops commences in December and continues through January, February, March, April and May.

The crop is harvested with tops when the beets are 2 to 3½ inches in diameter. The beets are cleaned and washed, tied in bunches by tops and packed in barrels, bushel baskets or crates for shipment. Yields per acre vary considerably but average about 120 barrels or 400 to 500 bushel baskets and are sold to track buyers or local shippers.

Growers know very little about labor costs for crop but the following cash outlay is about general per acre: Seed, $2.50; fertilizer, $7.00 to $10.00; land charge, $5.00 to $15.00; harvesting, about five cents per bushel basket for bunching; containers, $75.00 per acre.

Varieties grown are Crosby Egyptian, Early Egyptian and some few Detroit Dark Red.

Freezes in December, 1929, did considerable damage to very young beets and while many growers expect to replant, the indications are the 1930 acreage harvested will be less than the 1929 acreage.

The speaker just recently completed a trip through Louisiana and Texas and growers generally reported very small returns from beets in 1929 and experienced extreme difficulties in shipping so tops remain in good condition. Early in January growers were receiving forty to fifty cents per dozen bunches.

The packs of beets have not increased in proportion to snap beans. Statistics show the following packs (No. 2 cans, 24 cans per case) for beets and snap beans:

Commodity	1926	1927	1928	1929
Beets	1,233,662	1,128,767	1,293,667	2,004,104
Snap beans (wax and green)	4,037,000	4,676,767	,215,320	8,528,957

The more thoroughly one studies the growing and marketing of fresh vegetables, which must be shipped several hundred miles for consumption, the greater appears the possibilities for the growing and canning of the same vegetables where they may be economically produced and quickly packed at the proper stage of maturity.

Modern methods of grading and packing beets thereby producing a product of excellent quality offers a splendid opportunity for greater consumption of this product.

MR. RADEBAUGH: You will probably be interested to know that the freezes in Louisiana and Texas in December killed practically all the beets just up; the beets that had started to form were all right, but the small ones just coming up are pretty well killed out.

Another thing you may be interested in: I just completed a trip through Louisiana and Texas, taking in various places, studying the beet growers' attitude. All expressed their experiences in 1929 as far from satisfactory. They didn't make any money. In one section where they had 400 acres last year, this year there is not an acre. One fellow who planted 50 acres last year said he didn't harvest a beet, because he didn't get a market.

Perhaps I should hesitate in saying this, but I often think that the increase in canning of beets, as in string beans and other commodities, is having quite an affect on the possibilities of the men producing for the fresh market, so that if you canners would pack quality, properly graded, the cost of canned beets to the consumer would not be nearly so great as the cost of fresh beets to the consumer. So I feel you have a wonderful possibility of holding your own against that competition.

Another thing, it is almost impossible to ship those real small sizes. They like them to get two and one-half to three inches, because when they try to ship the smaller size, they don't hold up so well.

CHAIRMAN KRAEMER: Thank you, Mr. Radebaugh, I should like to ask a question: What is the price per ton these green growers get at the source?

MR. RADEBAUGH: The price varies. They don't sell by the ton; they sell by the dozen bunches or by the bushel; 40 to 50 cents a dozen bunches. Very few grocers ship direct. They have local buyers or shippers at these various stations and they load in refrigerator cars and ship it out, bringing $1 to $3 a bushel, or, as I said before, 40 to 50 cents a dozen bunches, and that is a terrific price down there.

CHAIRMAN KRAEMER: Are the beet growers as well organized as those in other sections?

MR. RADEBAUGH: No, none of the growers in the United States have nearly the organization for marketing that they have in Mexico.

CHAIRMAN KRAEMER: Do you know of any extensive beet growing operations in Mexico?

MR. RADEBAUGH: No, too bulky; not enought money in it.

CHAIRMAN KRAEMER: Do you suppose the Federal operations would extend among those growers?

MR. RADEBAUGH: You would bring that up. I don't know if I should answer that question or not.

Here is the point as I see it. I had a session with a gentleman down there who has charge of a lot of this marketing; he was formerly statistician for Texas and was in Washington on that on January 15th. I feel your string bean growers as a whole, and your tomato growers, and all those people where a crop of that kind is not the major crop produced but one of many, have a limited opportunity to go ahead and take advantage of the Federal Farm Board. For instance, you take fruit growers with large acreages. That fruit is their major business, and so in the dairy business, and that type of people will probably have a great opportunity to make use of the Federal Farm Board. As to the final results, none of us know what they will be.

CHAIRMAN KRAEMER: Are there any other questions?

DR. GORES: Have you evere estimated the bunches it takes to make a No. 2 can, for instance?

MR. RADEBAUGH: You can figure that up; I don't know about the canning. You have from five to six beets in a bunch; if they are real big, they will cut down to four beets to the bunch, as they run from one to three inches in size.

The canning industry in any of those states is very limited, as you know. It is very hard to get canners because when the prices are good, all the contracts in the world wouldn't get you what you contract for, and if they happen to be cheap, you will

get three times what you contract for.

DR. GORES: Have you followed those beets as to just what market they go through?

CHAIRMAN KRAEMER: May we suspend just a minute? Gentlemen, we have a treat this morning. Mr. Hartman was kind enough to let us in on the male quartet performing for the Corn Section.

Gentlemen, the Pennsylvania Railroad Rainbow Quartet. (Applause.)

Singing by quartet. (Applause.)

CHAIRMAN KRAEMER: Now are there any other questions you want to ask Mr. Radebaugh? He is probably the most interesting man I have heard talk on fresh vegetables and all their aspects, especially as relates to the major items such as beets and carrots.

MR. RADEBAUGH: I didn't answer Mr. Gores' question on the marketing of these beets.

Louisiana and Texas ship largely to the Central West, taking in St. Louis, Chicago, Milwaukee, and so forth. Florida and Mississippi ship largely to the Eastern markets. Occasionally, Texas shipments will go East clear to the Atlantic Coast, but that does not happen very often.

DR. GORES: Is all that used for table use?

MR. RADEBAUGH: Practically all of it. Once in a while the market may break and they will ship out carloads to canners, but that is seldom.

DR. GORES: They have never found anything they can use the coloring of these beets for, have they?

MR. RADEBAUGH: What do you mean?

DR. GORES: Wine. (Laughter.) I was in hopes somebody would find some use for it. That line of business seems to be the most profitable one. (Laughter.)

CHAIRMAN KRAEMER: My wife uses it to color eggs with at times.

"Simplification of Containers and Counts." I don't think you can hold us wholly responsible for introducing that subject. As you know, all sections are making a concerted effort on the simplification of containers. Those of you who have seen that report know what the activities of the Census Bureau are on it. In our own business we have been making quite a little study in an endeavor to eliminate counts.

Mr. Shannon is going to speak to us on this subject.

MR. F. L. SHANNON: When I was asked to go on the program, I was told that I was to lead a discussion on the subject of "Simplification of Containers and Counts of Beets." I notice, however, in the official program that my discussion has now taken on the dignity of an address. However, since the matter which I have to present is more on the nature of subject matter suitable to discussion, I think it is best that we stick to the original plan.

So far as the simplification of containers is concerned, I am not going to say much about that because I think most of you have heard our very good speakers on that particular thing who have spoken in other sections. I think you are all familiar with the work being done by the Department of Commerce on that same subject, and I believe we are all of us more or less favorable to it, although it seems at times that we are not getting very far. We recommend, and sometimes adopt, standard sizes of cans and the first thing you know: Somebody comes along with an eight ounce package, and we have one more.

I think we are all probably more interested in the simplification of counts (at least, I am) and that is a rather pertinent thing to our business.

So far as the simplification of counts is concerned, it seems to me that we could very well follow the history of the pea canning industry. If my information is correct, when peas were first canned everybody used the size grader screen that he thought was suitable for his particular trade, with the result it caused a multiplicity of sizes and grades on the market, depending entirely upon the whim of the packer. They soon found that was not the proper or desirable procedure, and finally—after, I suppose, many diligent hours or probably years of study—standardized on pea grades, so that now a No. 1 sieve pea purchased from any New York State packer is the same size as a No. 1 sieve pea purchased from a packer in Utah, Wisconsin, or in any other state in the Union. The packers of green beans have done practically the same thing; those are already standard throughout the whole packing industry. The California packers have practically standardized the count of peaches, pears, and other fruits, and have issued definitions and specifications on them. So we are not launching anything new. It's being done in other industries very similar to ours, and it seems to me it is going to be a simple matter to study the situation and get somewheres. I realize that we are not going to settle the problem here today, but, with a careful study, I believe steps can be taken to improve the situation materially.

In order to get some data on this matter, I asked the Secretary of the New York State Association to send out a questionnaire to the various beet canners of that state. The results of this questionnaire, although not unexpected, are indeed interesting and show the many variations existing in New York State, and I imagine they are fairly representative of the conditions in other beet packing states. This questionnaire was sent out to fifteen beet packers.

Our first question was: What size containers do you use?

Well, we found they were packed in practically all sizes. The following is the summary:

One canner used No. 55, 1, 2, 2½, 3 and 10; two canners used Nos. 55, 1, 2, 2½ and 10; two canners used Nos. 1, 2, 2½ and 10; one canner used Nos. 1½, 1, 2, 2½ and 10; two canners used Nos. 2, 2½, 3 and 10; three canners used Nos. 2, 3 and 10; one canners used Nos. 55, 1, 2, 2½, 10, 1½ gallon, 2 gallon and 2½ galllon; one canner used Nos. 2, 2½ and 10; one canner used Nos. 55, 1, 2, 2½ and 10; one canner used Nos. 1, 2, 2½ and 10.

W. H. ALBERS, President
National Chain Stores Association

Summary: Four canners used No. 55; nine canners used No. 1; one canner used No. 1½; fifteen canners used No. 2; twelve canners used No. 2½; six canners used No. 3; fifteen canners used No. 10; one canner each used Nos. 1½, 2 and 2½ glass.

As can be seen, the most popular size is the No. 2 and the No. 10.

Our second question was: What counts do you offer to the trade?

Here's where the variation starts, and it certainly is a variation. The following is the summary:

Counts for No. 1—20+, 15+, 40+.

Counts for No. 2 tin—8+, 13+, 22+, 40+, 70+. 10+, 15+, 22+, 50+. 12+, 15+, 20+, 40+, 50+. 10+, 15+, 20+, 25+, 35+, 50+. 6–7, 10+, 12–15, 20+, 35–40. 8+, 12+, 15+, 20+, 30+, 50+. 8–10, 15-20, 20–25. 12+, 20+, 60+. 15+, 17+, 20+, 50+, 75+, 9+, 13+, 17+, 25+, 37+, 78–80. 7–10, 12–15, 20–25.

No. 2—8–60.

No. 2½ tin—10+, 17+, 35+, 50+. 7–9, 8–10, 12–15, 20+, 60+. 10+, 25+, 35+, 40+. 15–18. 15+, 65+. 9+, 13+, 20+, 25+, 38+, 57+. 12+. 10–75.

No. 3 tin—8+, 15+, 22+, 35+, 60+. 10+, 14+, 20+, 30+, 40+, 80+. 10+, 15+, 20+, 30+. 11+, 14+, 22+, 28+, 42+, 65+.

No. 10 tin—20+, 30+, 50+, 75+, 125+, 200+, 300+. 30+, 40+, 50+, 70+, 110+. 30+, 40+, 50+, 60+, 70+, 70+, 100+. 125+. 150+, 200+, 250+, 300+, 400+. 40+, 60+, 70+, 100+, 130+. 30+, 40+, 50+, 60. 45–60, 105. 40+. 50+, 90+. 32+, 47+, 70+, 90+, 150+, 220+. 60, 70, 100, 130. 30+, 250.

Here, the variation ran all over the lot: On No. 1 (only two packers used this size), one packed 20 to the can; the other, 15 to 40. On No. 2s, from 7 to as high as 80 to the can were packed. On No. 2½s, from 7 to 75. On No. 3s, from 8 to 80. On No. 10s, from 80 to as high as 400.

On our third question, we asked: What type of grader is used?

Here is what we got on that:

Six used Sprague-Sells. Four used Trescott. One used Perforated Metal Shaker. One used Rotary. One Onion Grader. One used Shaker (home-made). One not named.

Question four was: Give number of screens in grader and size of holes.

Here is the summary:

Six screens ⅞, 1⅛, 1⅜, 1⅞, 2¼, 2½.
Six screens 1, 1¼, 1⅜, 1½, 1¾, 2.
Five screens ⅞, 1⅜, 1½, 1⅝, 1¾.
Twelve screens 1, 1 1/16, 1⅛, 1¼, 1 1/32, 1 7/16, 1½, 1 9/16, 1⅝, 1 31/32, 1 13/16, 1 23/32.
Five screens 1⅛, 1 7/16, 1 7/16, 1⅝, 1 13/16.
Six screens 1⅛, 1½, 1⅝, 1¾, 2, 2¼.
Seven screens ¾, 1, 1 1/16, 1 1/16, 1⅛, 1⅞, 2⅛.
Seven screens ¾, 1, 1⅛, 1 1/16, 1½, 1⅞, 2 1/16.
Seven screens ⅞, 1 1/16, 1 1/16, 1⅝, 1 13/16, 2¼.
Seven screens ⅞, 1⅛, 1¼, 1 7/16, 1 9/16, 1 13/16, 2.
Nine screens ⅝, ¾, 13/16, ⅞, 15/16, 1, 1 1/16, 1⅛, 1 3/16.
Two screens 1¾, 2.
Nine screens 1¾, 1, 1 3/16, 1⅜, 1½, 1 11/16, 2, 2⅛, 3.
*Seven screens 1⅛, 1⅛, 1 1/16, 1 1/16, 1½, 1½, 1 13/16.
*Seven screens 1, 1⅛ ,1 3/16, 1¼, 1½, 1 13/16, 1 13/16.

In this the variation is considerable, and it seems that no two packers used the same number of screens and sizes of holes. More amazing, one packer having two plants didn't even use the same number of screens, but all vary. This, of course, is the crux of the whole situation so far as counts are concerned. Naturally, in order to standardize counts, it will be necessary for us all to use at least the same size screens, and probably a similar type of grader.

I don't know whether the best packers as a whole desire to have the counts standardized; the matter is presented here to get your viewpoints, and if it seems the consensus of opinion of this meeting that steps be taken to simplify containers and counts, I would recommend that a committee from the National Association be appointed by the President of the National Association to study the problem and bring forward some definite recommendations to be adopted by the Board of Directors of the National Canners Association, or by the members of the Section.

I think, Mr. Chairman, that is all I have to offer. I hope we will have a little discussion.

CHAIRMAN KRAEMER: Has anyone anything to present on this subject?

I have a few points I would like to bring up at this time. For instance, I talked with one of the largest distributors of beets in the United States several times on that particular question of grades. I want to read from his letter:

"There has been, as in all canned vegetables, a consumption increase in canned beets, but how extensive is difficult to say, principally on account of lack of accurate pack figures up to the present time.

"In the class of easily procured throughout the entire season line of so-called 'fresh' vegetables we would include beets, carrots, and so forth. Because of this in the past, and even today, men in the industry believe such commodities in the can would never attain volume proportions, but many men today are beginning to realize they do save the housewife considerable labor in preparation.

"It is our candid opinion that staple canned vegetables will show increases in consumption from year to year, but in the same breath packers of beets are just coming into their own, and if they carefully guard their quality produced throughout the country there is no limit to what can be accomplished. We observe nationally recognized food authorities and leading doctors are beginning to point out the merits of all canned foods in their articles appearing not only in trade journals, but also newspapers and fiction periodicals. Immeasurable good can be accomplished with a minimum of expense if you can influence these writers to frequently mention the wholesomeness of canned beets.

"We honestly feel entirely too many grades and size tins of beets are packed, making it almost impossible to tell the housewife in a few simple words what grades are available, and suggesting how these shall be used for certain purposes. We strongly recommend, from a national standpoint, you simplify and condense containers and counts, and, if possible, have these backed by the U. S. Department of Agriculture.

"Merely as a suggestion along these lines, in our experience beets are used for salads and as a vegetable. As a vegetable they are practically at all times buttered or pickled. Only as a suggestion, we feel the following set-up will suffice every need:

"No. 1, 11 oz.—Diced, sliced, small whole.
"No. 2—Diced, sliced, cut, small whole, medium.
"No. 2½—Cut, sliced, small whole, medium.
"No. 10 tins in proportion."

Of course, the difference is not so great as in peas, where the different sizes are very dissimilar in sweetness. But that is not the question in beets. The medium small beet is just as good in flavor as its cousin in the bigger ranks, and we are just making ourselves a lot of extra work, a lot of trouble and a lot of chances for mistakes if we continue to pack so many sizes.

Our department has practically standardized on 10s, 15s and 20s, and a few others to absorb the real small beets, and we have no trouble in disposing of them. Every year we are making an effort to eliminate these specifications as they come in in these assorted sizes, and we get away with it in pretty fair shape—in fact, to such an extent that we don't get unusual sizes except in one or two cases.

DR. GORES: You recall several years ago the Wisconsin group had a little pamphlet printed with the size of the screen, and at that time we used 2s, 3s and 10s, and we had that down (I think) to six counts. At that time we had 10 off, 14 off, and we did cut down quite a few. It seems to me it would be all right if they would have this pamphlet here and take it up with the National Canners Association; they could probably print a new list and take in the 2½ instead of the 3, for I think the No. 3 can has probably died a natural death and will be eliminated entirely in a few years.

If each company could be furnished with this pamphlet, they could tell how large to cut their holes for their graders and they could then get their count.

So far as the size of the container is concerned, I don't know if the canners can accomplish much more or not. It seems the Government ought to adopt certain sizes and hold the manufacturers to it; that is, adopt certain sizes and make it so they are not alloyed to make different sizes. Our professional broadcaster, Mr. Henderson, says: "I don't see much chance of decreasing, because every big chain store has a certain size can of their own." It seems to be that if the Government would take it over it would simplify things.

MR. SHANNON: I wonder if there is any other state secretary here with similar data. Mine just covers New York State, and it would be interesting to hear from some others. What about Wisconsin?

CHAIRMAN KRAEMER: Yes, it has been done in Wisconsin. As is shown on best statistics, Wisconsin and New York can about 60 per cent of all the beets, so I think this is pretty much a problem for these two states to iron out. I know New York is very sympathetic toward standardizing counts.

Mr. Street, I wonder if you have some ideas on this?

MR. STREET: No, Mr. Kraemer, although I think I may have a possible explanation of those two plants of the same firm having different sizes. It is my impression that they consider a small beet in a small can and a larger beet in a larger can, thus somewhat accommodating their grading system in the different sized cans.

CHAIRMAN KRAEMER: Thank you, I think you are right on that. I know of one company with two sized graders in one plant and two others in another plant.

MRS. BABBITT: I have used a great many of the diced beets. The diced beets will hold up better for your table use after the can has been opened than any other kind. Beets, as you know, are a vegetable that dries very quickly, and you have to be very careful in storing them away from one meal to the next to keep them nice; those that are diced hold up better than those that are sliced. Most of the housewives prefer the diced beet to the sliced or whole, because they look much nicer on the table than either of the other two.

I would suggest we use the 2s instead of the 3s or 10s, because they contain all any person wants for one meal, and it is much nicer for the housewife.

MR. HOLT: I should like to add to what the lady said. Diced beets, as I predicted before this meeting four or five years ago, are rapidly coming to the front. As has been said, it has more value, and if we canners will be careful and dice only the tender beets, it will run your inexpensive beet out of the market. The small variety costs twice as much as the diced, and are not nearly so good.

CHAIRMAN KRAEMER: Thank you very much for opening the subject, Mrs. Babbitt.

Let's come back again to the count of the several containers. Mr. Shannon has just made a good suggestion. He asks that a committee be appointed to probably confer with the big operators of the country on counts and see if we cannot simplify this thing the same as we have peas, standardizing among the several states, and probably eliminate a lot of the odd sizes.

*Two plants, same firm.

As I have said before, we are only fooling ourselves and fooling Mrs. Houswife, and, after all, she is the one to take into consideration. I bet not one housewife in a million counts the beets as she pours them out of the can. Of course, it is necessary to keep certain standards as in peas, but it is absurd to have as many as twelve or fourteen different sizes; it only adds confusion.

MR. PENDLETON: Is it common practice to have double grading for the farmer bringing vegetables into the market?

CHAIRMAN KRAEMER: Considerable have that, although I do not think more than about a third of them are doing it; it is more of an operating convenience than packing.

MR. SHANNON: My thought in making that suggestion, Mr. Chairman, was merely that we present this thing at this meeting, and, if we do not do anything about it, we are just as far along next year as now. My thought is: If it is the sense of this meeting, we should appoint a committee to make definite recommendations. We have a year to do this in. If a committee is appointed, we could at least come before the meeting a year from now and make definite recommendations on whether to adopt or reject.

MR. DEMASTER: I think something definite should be done regarding the pamphlet also.

CHAIRMAN KRAEMER: My thought was to have the several officers of the Beet Section take care of that. Their operations are limited during the year, and it gives them something to work for. Of course, I should be glad to entertain a motion to have such a committee appointed, but it seems to me the men in charge of the Section's affairs for the year could handle it. Is there anything further on that?

I am sold on the idea that four counts is all you need, and I think we are just fooling ourselves when we go to more work, more labor, with more chances for arguments, grief and mistakes when you have more counts.

MR. DEMASTER: Is a motion in order to see that the officers go ahead? I think that committee should retain your services, as you have given it much time and thought. If I am in order, I move we appoint a committee to go ahead and try and work out a satisfactory definition of standards, or something to that effect.

CHAIRMAN KRAEMER: Well, it has some merit. Mr. Shannon, you would want two or three others, would you not?

MR. SHANNON: Yes.

CHAIRMAN KRAEMER: You would include in that motion assembling material for the pamphlet?

MR. DEMASTER: Yes; they interlock.

DR. GORES: Why not appoint two or three to assist on that committee?

MR. DEMASTER: That is included in the motion.

CHAIRMAN KRAEMER: Is there a second to that motion?

The motion was seconded.

CHAIRMAN KRAEMER: The motion is to the effect that the new officers of the Beet Section, together with two or three members to be appointed by the Chairman, confer for the purpose of working out standards on counts, and also to work out other material necessary in the compilation of the new pamphlet we are to get out.

MR. HOLT: Do you want that committee empowered to act without coming back to this meeting?

CHAIRMAN KRAEMER: They are merely to recommend.

The motion was put to a vote and carried.

CHAIRMAN KRAEMER: May we go back just a little to the question of simplification of containers? I am highly interested in what took place in Wisconsin. Two years ago close to 65 per cent of the beets were packed in No. 3 tins. We did not think it a good container; we could see the tendency for the smaller, and we harped on it. So we put on an extra nickel to the price of the No. 3 and discouraged it in every way we could, with the result it was reduced last year, with a further reduction this year, and only a few are now packing in the No. 3 tins. We are packing no No. 3s this year, where we packed them very extensively in 1928. I think 70 per cent of our packers used the No. 3 in 1928, and last year that was cut to 9 per cent. My argument was: We just simply will not have it, and we went to the buyers with that thing and I think only three or four insisted on delivery of the No. 3 tins.

DR. GORES: What was the attitude of the Government? Do they want definite action, or do they simply want to pass the buck? I think so far as the containers are concerned they are doing more bad than good. We practically took a stand on this three years ago, and there are constantly new cans coming in with just a little variation. Why does not the Government take action?

CHAIRMAN KRAEMER: The Government cannot prescribe elimination.

DR. GORES: They have asked for recommendations, have they not? And they have for the past five or six years, and we have voted and given our recommendations.

CHAIRMAN KRAEMER: I did not know that the Beet Section had gone that far.

DR. GORES: Why do we have these new cans?

CHAIRMAN KRAEMER: Who is packing beets in No. 303? (No response.) I do not know one packer who does.

DR. GORES: Well, it holds true in other vegetables. I think the Government should adopt certain sizes and then forbid manufacturers to make other sizes. (Laughter.) Of course, that is impossible.

CHAIRMAN KRAEMER: I am afraid I am a good deal like Mr. Radebaugh this morning. My mind does not function sufficiently to know if that is possible. The biggest thing that has been done has been by action of the different conferences that the Department of Commerce and the Federal Trade Commission have held. They have influenced this thing through popular demand and through co-operation, and so forth, but we do have (I am sorry to say) a couple of fellows in Wisconsin using a 303 container for accepted purposes.

H. J. BARNES, President
Utah Canners Association

MR. STOPPIN: There are certain items for which that can is the right size. For instance, I have packed asparagus, putting 25 to 27 stalks in a No. 303 tin, and asparagus certainly justifies the use of that tin.

CHAIRMAN KRAEMER: You certainly have an argument there, but the best canner doing that is just fooling the housewife, is she not?

MR. STOPPIN: Yes, but I simply wanted to state that there are a few items where we need it. Of course, it is not necessary in corn or beets.

CHAIRMAN KRAEMER: There is a tendency in the right direction. We were much more discouraged a few years ago. The tendency is for standardization. The Federal Trade Commission has been doing quite a good deal, as well as the Department of Commerce, and it is up to us to work with them.

We are coming to an address by Mr. H. A. Jones, Research Division, American Can Company, Chicago. This work Mr. Jones has been carrying on, and the topic under discussion is rather a combined idea, worked out between the Department and ourselves for the reason there were several things we were confused about, certain processes we were not quit clear on. We thought we would do some experimental work this year, and the American Can Company was kind enough to lend us their corps of experts. I am frank to say some of the illusions I had were wiped out; some of their experiences upset some of the ideas I had on the methods of canning beets.

We will now hear from Mr. Jones on the "Processing of Beets."

MR. H. A. JONES: Although, as your Chairman has just told you, the title assigned to me was the "Processing of Beets," my talk will have more to do with the process coming before than after. Mr. Radebaugh has stressed uniformity, so I have given my paper the title of "Uniformity in Canned Beets."

Uniformity in Canned Beets

By H. A. Jones
Research Division, American Can Company, Chicago, Ill.

THOUGH this paper has been given the title "Processing of Beets" in the program, it will deal more with the operations that precede and follow processing. The first part gives the results of an experimental pack which was made to discover if the holding of beets after blanching and before canning had any effect on the general quality of the beets, though particularly with regard to the effect on the color and the possible development of bitterness. The second part deals with the effect on the beets of exhausting the cans before they are closed in order to secure a uniformly high closing temperature.

The first of these experimental packs was made in the hope that we might be able to secure results which would clear up a situation concerning which there has been considerable uncertainty. This is in regard to the effect on the quality of the beets that holding for rather lengthy periods after blanching and before filling into cans and closing may have. The general impression has been that this holding period causes the beets to become dark and is responsible for the development of bitterness. The results of this pack seem to show results quite to the contrary. The beets in this pack that were held for long periods were found to be lighter in color and lost flavor, which resulted in a flat taste with a slight bitterness.

The experiment was conducted as follows: Early in the morning while 10-20 count whole beets were being filled into No. 2 cans, a number of cans in the regular run were marked and set aside after closing and processing to act as controls, since they were being canned immediately after blanching; at the same time a quantity of beets from the same lot that was packed into the control cans was set aside in galvanized iron lug boxes. From this supply six lots of cans were packed in the usual manner at the following intervals from the time at which the control lot was packed; one, two, four, six, eight and ten hours.

The packing procedure in the factory in which this work was done included the following steps: A blanch in a continuous water blancher for 21 minutes at 210-212 degrees friction peeled, hand trimmed and graded; the cans were then filled by hand, placed on a conveyor and carried by it under a brine pipe and through a short exhaust hood just before entering the closing machine. The cans were filled with brine that was kept at a temperature well up around 200 degrees. When warm beets were used, a good closing temperature in the cans was noted. The cans were given a process of 25 minutes at 240 degrees.

This pack was made on October 22nd and several cuttings have been made at different times during the early part of January to note the results. Before cutting open the cans, they were tested for internal vacuum and a very definite decrease in vacuum in cans of the respective lots was noticed as we went from the lot of freshly canned beets to those canned after periods of holding. This effect was due to the held beets being cold enough to chill down even the very hot brine used in this plant so that the average temperature of the contents of the can gave a rather low closing temperature. The very short exhaust they were given was not sufficient to increase the closing temperature materially.

In regard to the effects concerning which the pack was made primarily, it was found that there seemed to be no change in the quality of the beets up to and including those lots held six hours. The beets which were held eight and ten hours before canning were somewhat flat in taste and had a slight bitterness. It was believed that the trace of bitterness noticed may have become apparent due to the flatness of the beets, having been masked formerly by the sweetness and flavor of the fresh beets. The brine also had a trace of bitterness. The beets held eight and ten hours were somewhat lighter in color and seemed to be slightly hardened or toughened in texture.

Inasmuch as the beets that were used in this experiment were of rather good quality, we cannot be assured from this one experiment that beets can be held up to six hours without harmful results. It does seem to bring out, however, that holding does not cause darkening of 10-20 degree whole beets nor does it cause the development of distinctly sharp bitterness as has been supposed.

This experiment also shows that though there may be no loss in quality of whole beets due to moderate periods of holding, there is still the possibility of encountering difficulties due to the chilling of the beets. In order to secure more uniformity throughout the entire pack, all of the cans should receive a proper exhaust in order to warm up the cans that have been cooled by cold beets and to so secure a uniformly high closing temperature for all the cans packed. A high closing temperature will provide the cans with sufficient internal vacuum to hold the ends in firmly at all times and also is responsible for sufficient shrinkage of the contents to prevent flippers due to overfilled cans. As will be explained later, the reduction in volume of the contents of a hot can is sufficient to overcome this effect.

The results of this experiment brought out very definitely the value and necessity for having a proper exhausting of all cans in the production of a uniform pack. The omission of exhausting equipment in beet canning is rather common, perhaps due to the fact that many beet canners have as their primary interest the packing of corn and also peas for neither of which packs is any exhausting used except for No. 10 cans of peas. There has also been a rather general impression that it was harmful to the flavor and color of beets to give them an exhaust, and it was decided to find out, by means of an experiment conducted with that idea in mind alone, whether this impression was based on fact or not.

Because the regular conveyor exhaust boxes were being used in regular production, they were not available for use in making this experiment, so the different runs were exhausted in a crate placed in the middle of a vertical retort and subjected to a continuous flow of steam at a temperature if 210-212 degrees. Several of the exhaust periods were made exceptionally long in order that we might exceed by a wide margin the treatment that would be necessary to give the cans in ordinary production. We felt if the beets could stand this treatment there would be no doubt about their being able to stand ordinary exhausting without harm. The probable encessary exhaust periods are perhaps one-fourth or one-third of the longest periods given.

The cans were filled before exhausting with a view of duplicating the least favorable conditions that might be found and which should be corrected. This condition was that of a can giving a closing temperature of 120 degrees or less, and one lot of cans was clased at this temperature without any exhaust. Other similar lots of cans were prepared and given exhaust periods of 3, 5, 7, 9 and 11½ minutes at 210-212 degrees.

At the several cuttings which we have made of this experimental pack, there could not be detected, even in the cans given the excessively long exhausts, any commercial difference in color, flavor and texture of the beets nor in the color or taste of the brine as compared with the cans not exhausted. Cuttings have been made recently both at the factory where the beets were canned and also at the laboratory of the American Can Company, and the findings above have been confirmed by inspections made by at least a dozen different persons.

These results seem to warrant the conclusion that exhausting does not harm the product. In order to secure uniformity at all times in the conditions under which cans are prepared for closing and processing, an exhaust is a necessity. Processes for beets have been calculated on the basis of an initial temperature of at least 150 degrees, which means that the can must leave the closing machine at a higher temperature in order to be at 150 degrees when it reaches the retort. In a beet cannery, due to the necessity for storing of various sizes of beets until sufficient of any one size are on hand for a run, there is a great difference in the temperature of the beets of various lots when the time comes for them to be canned which, as has been stated before, is a cause of lowering closing temperature. This and other factors bring about lack of uniformity in production, such as unforseen stops in operations and the lack of a supply of brine sufficiently hot to bring cold beets up to a satisfactory high closing temperature.

Reference has been made rather frequently to the term "closing temperature" and it may perhaps be well to define just what it is to cite also some conditions wherein its requirements are not fulfilled even though thermometer readings may indicate a good temperature. The closing temperature of a can is the average temperature of all the contents of the can just at the moment of closure. The average temperature is that temperature to which the contents would come in time by mutual exchange of heat if the can were enclosed so that it could not radiate heat. It is important to note that the closing temperature is not necessarily the temperature shown by a thermometer placed in the brine of a can just filled, for the brine may be very hot and the beets cold and it will require several minutes for a transfer of heat to take place from the brine to the beets which would lower the brine to the true closing temperature. This is why the temperature of the brine of a can coming from an exhaust box is more truly the average temperature of the contents. The time the can is in the exhaust box is sufficient to permit the heat to equalize itself through the contents of the can. Another misleading reading is one taken with the bulb of the thermometer held in the brine at the top of a can. This reading may be as much as 30 degrees to 40 degrees higher than one taken with the bulb at the bottom of the can, especially if the can has not been exhausted and has traveled some distance on a conveyor between the filling and brining and the closing machine. This is because the hot brine remains at the top and that chilled is down near the bottom. Before taking a reading the contents should be stirred if possible, or the bulb should be held near the center of the can.

In table No. 1 which is here shown, are some values which will show just why a high closing temperature is effective in producing high internal vacuum in a can and in preventing flippers.

TABLE No. 1—SHOWING THE REDUCTION OF VOLUME OF THE CONTENTS OF A CAN WITH VARIOUS DIFFERENCES OF TEMPERATURE

Closing Temp.	Percent difference in volume of contents When stored at 50°	When stored at 80°
110°	.8	.6
120°	1.0	.8
130°	1.2	1.0
180°	2.9	2.7
185°	3.1	2.9

In column one are listed several different closing temperatures, from low and unsatisfactory values to considerably higher and better ones. The second column shows the percent decrease in volume of a can filled with water when it is cooled from the temperature shown in column one to a storage temperature of 50 degrees. Column three gives similar values for a cooling to 80 degrees. Values are given for the two storage temperatures to show that there is a difference in volume at the two temperatures and so account for the fact that a can may have a satisfactory appearance when stored in one place and when stored at a higher temperature may become a flipper. Even when a can has been filled so full that the bottom is pushed out when the cover is pressed down in placing it for the seaming operation, the end will be drawn in when the can is cooled if the closing temperature has been high enough to cause sufficient shrinkage of the contents.

By the effect of closing temperature alone, this data shows how it is possible to secure this result and so prevent flippers. If the closing temperature is high enough this shrinkage will also be sufficient to provide a strong internal vacuum that will hold the ends in firmly, so that they will not bulge even at comparatively high storage temperatures. The adoption of proper methods to secure these results is an excellent form of insurance to assure yourself of a uniform and high quality pack. It certainly should give a great deal of satisfaction to have the feeling of confidence that it will give that you will not be troubled with flippers when shipping time comes. It certainly will cut into the profits when you find you have a lot of flipper cans to recover or have to pay claims on cans that you have shipped out. Although they may contain perfectly good beets, they are unmarketable because of the bulge in the end of the can.

The sad story of many good cans of beets improperly packed is told in a few instances below which were taken from our records. One is of a pack of 90,000 No. 10 cans in which there were 1,300 springers. Another more pleasant record is of a pack that was started in the same direction with 100 springers in 1,500 cans but in which further trouble was stopped by increasing the closing temperature. No more springers showed after measures were taken to see that the closing temperature was kept high at all times.

We also have notices of shipments on hand at broker's or wholesaler's warehouses that read as follows:

200 cases No. 10 cans, 28 cases flippers
175 cases No. 10 cans, 15 cases flippers
76 cases No. 10 cans, 38 cases flippers
22 cases No. 3 cans, 64 cans flippers
20 cases No. 3 cans, 12 cans flippers

What could be a better argument than this to cause you to provide yourself with means of saving yourself from the expense and trouble from flippers and overfills. The only way you can make sure that the pack will all receive uniform treatment in the way of closing temperature is to make use of a proper exhaust.

MR. JONES: I have been asked to report another experiment on the holding of topped beets for these periods. The results were good, but they did not cover a wide enough area to put into the paper. We held some beets at 22 degrees in a cold-storage warehouse, and canned them in 30 days. We also held a control lot in a warehouse for canning for that same period, but as that warehouse was perhaps around 40 degrees most of the time, due to the cold fall, and also perhaps due to the fact the beets did not receive the same treatment as in a large lot, we did not want to consider this result and make definite recommendations. However, the results seemed to indicate that if held under proper conditions they can be kept for at least 30 days without changing the quality. (Applause.)

CHAIRMAN KRAEMER: When you say they can be held for thirty days you mean to say under certain temperatures and under certain conditions, do you not? I would think that if you were to pile them up in a great mass and allow them to get warm and start to sweat the result would not be satisfactory.

MR. JONES: Oh, yes, this was simply made at that time, and my only idea in mentioning it was that you might work along the same lines yourselves. We are planning next fall to do some more in that direction, and perhaps will be in position to give you more definite information next year.

MR. CARTHIZER: What kind of an exhaust is needed and for what period of time?

MR. JONES: This particular exhaust of 21 minutes at 200 degrees indicates they stood it very well.

MR. CARTHIZER: It might make a difference as to the size can.

MR. JONES: No. 2s and 2½s are what we used.

CHAIRMAN KRAEMER: The question of exhaust is not so important as the question of temperature.

MR. CARTHIZER: What I was trying to find out is how long it takes to get your temperature up there.

MR. JONES: Three minutes for 2s, 2½s and 3s, and five minutes for 10s.

MR. CARTHIZER: Is that exhaust just what gets the steam on the sides of the can or on the top? Do you blow on the sides of the tin?

THOS. F. BRANHAM, President
National Wholesale Grocers Association

MR. JONES: The steam pipe has a guide, and this had holes perforated, the steam coming out as perforation against the sides of the can.

MR. CARTHIZER: Probably the most logical way is to put the brim on before.

MR. JONES: Yes, it is.

CHAIRMAN KRAEMER: One of the significant things of this test was the better blend. One lot of beets was canned in the morning at 8 o'clock, another lot at 10 o'clock, another at 12 o'clock and one in the afternoon, and there was hardly any difference in the color during the six-hour period. After the six-hour holding a different flavor was observed.

DR. GORES: What do you mean?

CHAIRMAN KRAEMER: There was hardly any difference up to six hours, except for the fact of allowing them to cool resulted in lower vacuum.

MR. JONES: In fact, for the beets held six hours the vacuum was only one inch; ten hours, two inches; the six-hour lot, three inches, and then down to those right after blanching about ten inches in vacuum. So, you can see there was quite a variation.

DR. BIGELOW: Did you hold these beets in containers that were ventilated so they could cool readily?

MR. JONES: Yes, they were held in the same boxes used to store beets at the plant.

DR. BIGELOW: Do you not think if you held them in containers not ventilated, such as galvanized tubes, there might be different results?

MR. JONES: Yes, there might be, but I used the tins at the plant which happened to be these tin lug-boxes.

MR. NAGLE: How about the beets that were not down in the liquor; did they discolor?

MR. JONES: No, they did not; we did not notice any difference. Of course, though, before they were put in the closing machine the brine came up. You know quite often when you close canned beets there will be some sticking up like that, but there will be enough overfill inside to push out the bottom and stay out until after the cans are cooled sometimes, so that is the value of this temperature.

MR. NAGLE: Is it not true that beets with a slight discoloration on top when cooled off will show up the same color as the others?

MR. JONES: Yes, that is a natural fact; with all the equilibrium taking place, the results are not bad.

MR. NAGLE: I wonder what experience the trade has had with regard to beets that became old, or have been stored quite a while; that is, as to color. How do such beets compare with fresh canned beets?

CHAIRMAN KRAEMER: Do you mean beets held in storage for quite a while and then canned?

MR. NAGLE: No, I mean beets that have been stored, say, for a year in cans. How does the color of those beets compare with freshly canned ones?

CHAIRMAN KRAEMER: We have made comparative cuts and never found any depreciation in color in a year, at least. Of course, that is about all the time I have had a chance to serve. Naturally, there would be a little difference in those just freshly canned.

MR. NAGLE: I mean within three months after they have been canned.

CHAIRMAN KRAEMER: If there is nothing else, we will pass on the report of the Nominating Committee. Dr. Clark.

THE ELECTION

DR. CLARK: In your printed program it appears that one office was omitted, and that is the office of Vice-Chairman, held this past year by Mr. Minton, of Oregon. Therefore, your committee is pleased to nominate as officers for the coming year: Mr. C. P. Minton, of Oregon, Chairman; Mr. F. L. Shannon, of New York, Vice-Chairman; Mr. J. E. Demoster, of Wisconsin, Secretary.

CHAIRMAN KRAEMER: You have heard the report of the Nominating Committee. What is your pleasure? May we have a motion to adopt this report?

It was moved, seconded, put to a vote and carried that the report of the Nominating Committee be adopted.

CHAIRMAN KRAEMER: The report is adopted and the several members stand elected for the ensuing year.

Gentlemen, I should like you to move a vote of thanks to the American Can Company for the work they have done. They have been put to considerable work in making these experiments Also, a vote of thanks to the Pennsylvania Railroad for the use of their quartet this morning.

MR. SHANNON: Mr. Chairman, I so move.

CHAIRMAN KRAEMER: All in favor of that motion to thank the American Can Company for the work and expense they have put through in behalf of our Section, and to thank the Pennsylvania Railroad for entertaining us this morning, also that the Secretary of the Section be instructed to write these various parties, will respond by saying aye. The motion is carried. Gentlemen, a motion to adjourn is in order.

Upon motion, regularly made, seconded and carried, the meeting adjourned at 11.35 o'clock.

Meat Section

Thursday Morning, January 23, 1930, 10 A. M.

L. M. Tolman, Chicago, Illinois, presiding.

THE meeting of the Meat Section of the National Canners Association, convened at ten o'clock, Mr. L. M. Tolman, Chicago, Illinois, presiding.

CHAIRMAN TOLMAN: In addition to the program as it is given here, we are going to have the privilege of hearing Dr. Meyer discuss the general scheme of processing control that is employed in California, and that will come in a later part of the program. I think you will find that exceedingly interesting.

The first business on the program is the appointment of a Nominating Committee for nominating officers of this section for next year. I am going to ask Mr. J. J. Vollertsen, of Armour & Co., Mr. Bollman of Libby's and Mr. Brickman of the Illinois Meat Company to act as that Nominating Committee. They will bring in their report at the end of the meeting.

At this time it is up to the Chairman of the Section to make a brief report on the work of the last year.

As you know, there is a Technical Committee, consisting of the officers of the Section and five other members, who have general supervision of the research work that is being done in connection with this Section. This committee has had a number of meetings this past year, particularly with Dr. Cameron of the National Canners Association, and has planned and carried out a certain amount of research work.

The first work was in connection with the two packs of meat which were put up last fall and which Dr. Cameron will report upon this morning. The next two packs will be of frankfurters and of tripe and milk. It is the plan of the National Canners Association and our Section to go through practically all of the processes connected with meat canning, that is, the processes where the products are supposed to be thoroughly sterilized, to see whether all these processes are satisfactory from the standpoint of botulinus processes. This is going to take a considerable length of time, but it is making progress, and the organization is such that it is going to go ahead.

You know, of course, that a year ago Mr. Thompson of the National Canners Association did go over a good many of our processes, finding out what they were, and making heat penetration studies. These studies he made are, of course, available, and my understanding is that we are going to have available a lot of information on heat penetration studies that have been made by the various can companies, the American and the Continental, to aid in getting at this question a little more quickly.

We shall also have a report on the second research project, the Bacterial Content of Salt, by Dr. Yesair.

The third research work that has been done in co-operation with the National Canners Association was the work that was done in co-operation with Dr. Estey in California, who is studying the heat resistance of botulinus, and also the effect of curing agents. That work will not be reported on this time, because it is still in process and is going to take a good deal longer to carry out.

The Chairman of the Section has attended a number of meetings with the Board of Directors, and the Secretary has been called upon by the Association to discuss a number of other questions, such as the tariff, with the General Secretary of the National Canners Association.

The Section now has twenty-two members who are canners of meats, and this membership pretty well covers all of the canners of meat that are in any way large canners.

That, I think, gives you a picture of what has been done in the past year.

We will now proceed to the regular program of the meeting, and have Dr. Yesair's paper on the "Bacterial Content of Salt."

BACTERIAL CONTENT OF SALT

By JOHN YESAIR, *Research Laboratory*
National Canners Association

DURING the 1929 Convention of the National Canners Association, Dr. Cameron read a paper on "The Bacterial Flora of Sugar and Salt." In that paper he outlined a tentative program for a series of studies relating to the canning of meats and meat products. It was decided that one phase of that program should be a study of salt since it is an important ingredient in the preparation of meats for canning.

Few studies have been made on salt and those were in connection with other branches of industry. Bitting in 1911, Harrison and Kennedy in 1922 demonstrated that a coccus type, Ps. salinaria, was the casual agent of the red discoloration of cured fish. James believed that this same organism caused red discoloration during the curing of hides. Harrison found a rod

shaped organism, Ps. fluorescens, in fresh water ice and in sea water. This organism has caused discoloration of fish. However, such type of organisms have not been reported as causing spoilage in canned meats.

Sturges and Parsons in 1926 found a putrefactive anaerobe, C1. flabelliferum, in salt from Great Salt Lake, in sludge from salt leeching vats, and from some meats cured with this salt. Sturges also reported the isolation of C1, sporogenes, C1. flabelliferum, C1. welchii, and presumably C1. bifermentans from coarse grades of mined and solar salt from two states. Lang found spores of gas-forming thermophiles in two samples of rock salt. Halophiles or salt tolerant organisms were found in plate counts of 0 to 3000. Flat sour and sulphide spoilage thermophiles were negative. Esty in reporting the work of Townsend of the Western Branch Laboratories of the National Canners Association stated that spores of flat sour thermophiles and putrefactive anaerobes were found in salt from California.

In this study it was planned to examine salt samples from as many sources as possible.

SALT SAMPLES

One hundred and twenty-five samples from various sources were studied. Thirteen samples of refined table salt were purchased on the open market. Fifty samples of salt and 16 samples of brine were obtained from 17 salt manufacturers in the United States. These brine and salt samples represented the different stages in the refining of salt and served to give an idea of the bacterial flora during the various steps. The samples were collected in sterile bottles sent out by this laboratory.

The general procedure used in the manufacture of evaporated salt is to force water into deep salt wells. The brine is partially evaporated and then sent to settling tanks where much of the impurities are removed. The brine then passes through heaters, filters and evaporators, of the vacuum pan, or open or grainer types. The salt is dried in centrifugal driers, or hot air or kiln driers. The various grades are obtained by screening.

Six samples of solar salt were obtained through the courtesy of the Bureau of Chemistry and Soils. The Bureau had received these from California, Utah, and Spain. Another sample of solar salt was received from a fish packer in Maine. In the manufacture of solar salt, sea water is evaporated by the heat from the sun and the crude crystallized salt is worked up much the same as is refined evaporated salt.

Three other samples of salt were tested. One, a granular salt of unknown origin which carried pink chromogenic bacteria, was received from a fish packer, and two samples of granular salt of unknown origin came from a vegetable packer.

The meat packers cooperated in this study by sending in 22 samples of refined granular salt used in dry curing and pickling of meats, and also 14 samples of ground rock salt which is also used in curing and pickling meats. The rock salt is a mined salt and it usually contains a large amount of entrained dirt.

CULTURING PROCEDURE

In preparing the salt samples for bacterial examination, they were weighed in sterile tared flasks and sterile water was added to make up a 20 per cent solution. In the case of brine samples the concentrations of salt in the brines were calculated from their specific gravities as determined with a Westphal balance. By using a known volume of the 20 per cent salt solution and of the brine solution respectively, the results for bacterial counts could be reported as the number of bacteria per gram of salt.

The cultures incubated at 37 degrees C. included plate counts for the total number of aerobic bacteria in each sample. Plate counts were made for flat sour bacteria. These bacteria when growing in canned foods produce acid without gas and the can remains flat. They are associated with spoilage in vegetable products but so far as is known are not notably concerned in the spoilage of meat products. Plate counts were also made for the halophilic bacteria. These bacteria prefer and some of them require a relatively high concentration of salt in the medium in which they are grown. Our medium contained 10 per cent salt. A lactose broth medium was used to test the presence of bacteria of the B. coli group. This group denotes unsanitary conditions when found repeatedly.

Special emphasis was placed upon the test for bacteria of the anaerobic type. These organisms require absence of air for their growth and canned foods satisfy this requirement because of the vacuum attained in the canning of heated products. The presence of anaerobes was detected by the use of liver broth. These are the bacteria commonly associated with spoilage in canned meats.

Cultures were also incubated at 55 degrees C. to detect those bacteria which prefer or require high temperatures for their growth. These cultures included plate counts for total number of bacteria and for flat sour bacteria. Tube cultures were made for the sulfide spoilage bacteria. This group grows in the absence of air and produces hydrogen sulfide. The salt samples were also examined for anaerobes growing at 55 degrees C.

The first few samples of refined salt were examined for bacterial spores by heating the test solution at 85 degrees C. for 15 minutes. This procedure kills the vegetative forms of bacteria which are concerned only when a material such as salt is used without heating preparatory to curing of meats. The rock salt samples were, however, tested for spores. All plate and tube cultures were incubated for 48 hours.

RESULTS

The bacterial analyses of 125 samples of salt and brine showed that there were no flat sour organisms growing at 37 degrees or 55 degrees C. Organisms of the B. coli group and sulfide spoilage type were also negative. The other types of organisms will be grouped for each set of samples.

MARKET SAMPLES: Total plate counts at 37 degrees C. showed 0 to 25 bacteria per gram of salt, halophiles or salt tolerant bacteria 2 to 5 per gram. Plate counts at 55 degrees C. showed 1 to 5 bacteria per gram. One unheated salt solution showed anaerobes at 37 degrees and 55 degrees C., but these were absent in heated samples. This showed the absence of spores.

E. C. HATCHER, President
Virginia Canners

SAMPLES FROM SALT MANUFACTURERS: Total plate counts at 37 degrees C. were 0 to 30 bacteria per gram, and the halophilic counts were 0 to 86 per gram. Plate counts at 35 degrees C. were 0 to 20 per gram. One unheated brine sample showed anaerobes growing at 37 degrees C. but not at 55 degrees C., and not at 37 degrees C. when the brine was heated, showing absence of spores.

SOLAR SALT SAMPLES: These samples showed a plate count at 37 degrees C. of 2 to 1470 per gram. At 55 degrees C. the count was 2 to 35 per gram. Halphilic counts varied from 0 to 14 per gram. There were no anaerobes either at 37 degrees or 55 degrees C. The total bacterial count of solar salt samples was much higher than it was in the samples of refined salts.

SAMPLES FROM MEAT PACKERS: The refined granular salts showed plate counts at 37 degrees C. of 0 to 44 per gram and at 55 degrees C. of 0 to 10 per gram. The halophilic count was 0 to 73 per gram. There were no anaerobes growing either at 37 degrees or 55 degrees C. The bacterial content of these salt samples was low and about the same as is found in the salts received direct from the salt manufacturers.

The rock salt samples contained a greater number and variety of bacteria than any other samples studied. Total plate counts at 37 degrees C. of unheated samples showed 4 to 413 bacteria per gram, and on heated samples 4 to 195 per gram showing the presence of a considerable number of spores. The plate counts at 55 degrees C. were 0 to 64 per gram in unheated samples, and 0 to 62 per gram in heated samples, showing the presence of thermophilic or heat loving bacteria. The halophilic count was 0 to 53 per gram.

Anaerobes growing at 37 degrees C. were present in nearly all samples which had been heated at 85 degrees C. for 15 minutes. These cultures were sub-cultured in liver broth and pork broth media, both at 37 degrees and 55 degrees C. Those bacteria growing at 37 degrees C. produced a putrefactive odor, while the only anaerobe growing at 55 degrees C. produced a cheesy odor characteristic of thermophilic anaerobes.

DISCUSSION AND CONCLUSION

It has been shown in this study that evaporated salts of the refined granular table or dairy types have a low bacterial count. The temperatures, 300 degrees to 510 degrees F., used in salt refining processes are sufficient to destroy the significant spoilage bacteria. The few bacteria which are found in such salts evidently come about from air contamination during handling, and are of non-heat resistant types.

Mined or rock salt offers a source of contamination because this type of salt is not refined and therefore contains entrained dirt which constitutes a carrier of contamination agents. Spores of anaerobes of the puterfactive type were found in rock salt in numbers up to 50 per gram.

Putrefactive anaerobes constitute a recognized cause of ham souring. Also these are the organisms most likely to cause spoilage of canned meats. From these standpoints, then, mined or rock salt may be looked upon with some suspicion from a qualitive angle. It must, however, be emphasized that other sources are known to exist in meat packing operations and rock salt as a source of anaerobes would have to be considered quantitatively in relation to other individual sources and the sum total of all anaerobic contamination before a valid opinion could be given as to the actual significance of our findings.

For the present, it is well to point out, that there is an advantage in limiting all increments of troublesome contamination, where this is possible, and it appears that the solution for this difficulty would lie in the use of granulated salt for canning purposes.

CHAIRMAN TOLMAN: I have some questions I am going to ask, but first we are going to have the Pennsylvania Railroad Quartette sing for us.

The Pennsylvania Railroad Quartette sang "Drink to me Only With Thine Eyes," "Kentucky Babe," and "I'll be Ready When the Good Lord Comes."

CHAIRMAN TOLMAN: Unfortunately, we will not have that intermission after every speaker.

There is one question I wanted to ask, and it is a thing that has bothered me a good deal in this question of bacteria in salt, and that concerns the salt culture made. I should like to ask if, say you had ten per cent salt, and you changed to five per cent salt, or twenty per cent salt, you will get any different growth of organisms or different types of organisms. When we deal with salt we deal with all sorts of dilutions. This is a point which has bothered me a good deal, and I thought we might get a little light on the culture.

DR. JOHN YESAIR (Research Laboratory, National Canners Association, Washington, D. C.): The general rule is that our media are made up of about a ten per cent solution. However, the Bureau of Chemistry and Soil did grow their organisms on salt media with a higher salt content, somewhere about twenty per cent salt, but I think you will find the solution is varied with the type of organisms you are looking for.

DR. E. J. CAMERON (Research Laboratory, National Canners Association, Washington, D. C.): The ten per cent medium is one that is usually decided on for the halophilic organisms.

SECRETARY C. R. MOULTON (Chicago, Illinois): Did you have any fresh ground rock salt from the manufacturer to compare with that from the packers, to see whether there might be contamination in the plant?

DR. YESAIR: Our idea was to get rock salt right from the manufacturer, but for some reason or other that could not be done. We tried to get salt samples from the manufacturer, but we did the next best thing in getting them from the users. Requests were sent to the manufacturers.

SECRETARY MOULTON: The burden of the proof is on them, then.

CHAIRMAN TOLMAN: Dr. Tanner, I should like to get your view on that question of culture media for salt work.

DR. F. W. TANNER (Department of Bacteriology, University of Illinois, Urbana, Illinois): I think any bacteriologist would be willing to discuss these questions, but it is quite possible we might disagree. We often hear the criticism that no two bacteriologists would ever reach the same results.

Obviously, you could start with one per cent and go up to forty or fifty per cent, but that would be unnecessary. Dr. Cameron said we ordinarily strike at ten per cent, but in remembering what I can of the publications that Dr. Sturgess and his colleague furnished, he said the solution did greatly determine the type of organisms you would find. I have not studied those papers recently.

A number of years ago we analyzed a great number of samples of solar salt, and as I remember, the count was zero in every case. Then we secured a number of samples from the Worcester Salt Company. They also were sterile. I do not know whether the brine had been heated or not, consequently we never published those data.

MR. W. LEE LEWIS (Institute of American Meat Packers, Chicago, Illinois): If I understand Dr. Yesair correctly, he said he found none of the colon group in any of the samples. That seems rather striking, particularly in the matter of solar salts. They are supposedly made of sea water, which contains animals and fish which contain colon groups, and they use horses in handling the solar salt. Does that not seem interesting?

DR. YESAIR: It does, especially with the solar salt. I do not know, of course, exactly how much they treat that salt in the refining process, but with other types of granular salt the process used is enough to kill any of the colon groups.

DR. CAMERON: As regards the possibility of whether the rock salt is contaminated in shipment, unless there is positive indication that the rock salt was stored under less favorable conditions, or in dirtier conditions than the refined salt, we would have there an indication that the question of storage in shipment did not have much to do with it, because a great number of refined samples were obtained from the various sources and did not show any undue contamination.

CHAIRMAN TOLMAN: Will colon grow in a ten per cent salt solution?

DR. YESAIR: That group was tested in a solution of less than two tenths per cent, but it was made in a great number of tubes, where the total amount of salt used per sample is quite high.

CHAIRMAN TOLMAN: Suppose those colon groups had been accustomed to a high content of salt. If they did not grow in one solution, what would happen if you changed the solution?

DR. YESAIR: I do not know. They might grow in one and they might not grow in another.

CHAIRMAN TOLMAN: Dr. Meyer, do you wish to add anything to this discussion?

DR. K. F. MEYER (Hooper Foundation for Medical Research, University of California, San Francisco, California): I do not.

MR. L. S. PADDOCK (Swift & Co., Chicago, Illinois): I should like to ask whether he noticed any of these red colored organisms we find on hides, generally attributed to the salt we use. Did you notice anything like that?

DR. YESAIR: I found a few of those reddish type of organism, but I did not lay much emphasis on that except on one sample that came from a fish packer on the eastern shore. Growing that on fish media I did get the red type of organism, but I did not get it on refined granular salt, or even on rock salt.

MR. PADDOCK: You found nothing on the granulated or rock, either one?

DR. YESAIR: No.

MR. B. M. SHINN (Armour & Co., Chicago, Illinois): Why was no anaerobic work done at twenty-five degrees? Why use thirty-seven and not twenty-five degrees?

DR. YESAIR: That is the general procedure that is used in canning vegetables. I did not care to go into more than the two temperatures. At twenty-five you sometimes get an overabundance of mould growth. They grow better at a lower temperature than thirty-seven. You have few moulds that grow at thirty-seven.

CHAIRMAN TOLMAN: Is there any further discussion of this paper? If not, we shall take up the next paper, on "Simplification of Containers," by Mr. Dunn, of the Division of Simplified Practice, United States Department of Commerce, Washington, D. C.

(See the "Report of a Study of the Canning Industry, made by the Division of Simplified Practice of the Department of Commerce," as read by Mr. P. H. H. Dunn, Division of Simplified Practice, United States Department of Commerce, Washington, D. C., at the Wax and Green Bean Section.)

CHAIRMAN TOLMAN: Do you think it is probable they will make a survey of the meat canning industry during the year?

MR. DUNN: That is entirely up to you people. If this section would care to go on record as officially asking us to take up the matter for meat canning we certainly would be glad to do it. I understood that some studies had already been made by the meat packers. I wonder if anyone here has participated in that?

CHAIRMAN TOLMAN: There is a committee of the Institute of American Meat Packers that is working on this line, but I do not know how far they have gone, and I do not see any of the members of that committee here, although they promised to be here to discuss this situation.

SECRETARY MOULTON: The Institute has a committee on the "Elimination of Waste," which has taken up equipment of various kinds, cans for lard, packages for various products, and has made recommendations for the reduction of sizes and the simplification of cans, and the savings have been made and they have been considerable. I am sorry these men are not here to report for the small canners. They did make some survey. They have some information, and I should say briefly it confirms your general statement that there are varieties of cans varying only in minute measurements. We all know what changes in machinery are required for all those little changes. There would appear to be no real reason for the multiplicity of sizes.

I happen to have here some information on glass on one product which the Institute has been surveying, and upon which they may some time make a recommendation, and that is dried beef in glass. The sizes that are now being produced start with one and one-half ounces, go to two, two and one-half, three and one-half, four, five, seven and eight ounces.

It is quite apparent when a person buys the one and one-half and the two-ounce sizes they are buying chiefly cap and glass, with a little meat inside to color the glass. These small, odd sizes invite the kind of competition which is not in the interest of the consumer or the producer. You can make a small price differential that may attract the consumer to take a smaller priced package, but the consumer is getting the small end of it, because he is buying largely overhead and not the product he is after.

The Institute of Meat Packers for the meat industry have taken the stand in favor of even fractions of a pound. They would be greatly interested in such things as four-ounce and eight-ounce containers, and the elimination of some of the other sizes, but some of these other sizes are so well established that it may be impossible for the meat canners to agree to that general type of recommendation. Certainly some simplification of these sizes, for example the dried beef in glass would be in the interest of everybody, especially the consumer.

MR. A. W. BRICKMAN (Illinois Meat Company, Chicago, Illinois): I do know the Institute took up the possibility of eliminating a great many sizes, and they did receive the help of the two can companies in obtaining the sizes that were used in other industries, so they could obtain a better price on their cans.

I should like to suggest to the Chair that this problem be given to the new Executive Committee and that it be taken up with the Department of Commerce, so that it can be settled during the coming year.

CHAIRMAN TOLMAN: I think this matter of taking it up with the new Technical Committee is a good idea, with the suggestion that it be put before them for action. The Secretary will make a note of that and it will be brought to the attention of the new committee.

We want to thank you very much, Mr. Dunn, for coming in here. We enjoyed your talk. (Applause.)

The next paper on the program is, "Use of Experimental Packs in Processing Studies," by Dr. E. J. Cameron, Research Laboratory, National Canners Association, Washington, D. C.

Use of Experimental Packs in Processing Studies

By E. J. Cameron
Research Laboratory, National Canners Association

I HAVE heard it said that there are a million miles between the findings of the laboratory and their industrial application. Aside from the fact that it does not seem possible to express this situation in terms of linear measure, something of an exaggeration may be implied from this statement. Nevertheless, I think that the feeling or sentiment which prompted the expression would, if appreciably toned down, be a valid one.

We have all heard of the great gaps between fundamental scientific discoveries and their industrial application, and none of us would make bold to say that any single scientific fact of entirely classical interest at the present time may not find direct application to the interests of mankind in the future.

In illustration of this, I recall a radio address by Dr. Robert A. Millikan, in which he gave the history back of recent scientific developments. In this address he maintained that the radio in its present form was not the great development that it appeared, but that the great discovery which led to the radio concerned electronic discharges in high vacuum, and this preceded by something like twenty years any thought that such a thing as radio transmission was practicable. The studies on the electronic discharges were of entirely classical interest for several years.

Part of the gap between the laboratory and industry is due to certain inherent characteristics of scientific research. It is seldom that any single discovery can be transferred without modification or enlargement directly into the industrial scheme. A material part of the gap, however, is due to lack of correlation or perhaps coordination between the classical and industrial fields. That this coordination is constantly improving, with a consequent closing of the gap, is apparent on every hand, however, and to my mind this is attributable to the increasing use of industrial research or development laboratories which have as their chief function, first, the job of recognizing industrial necessities, and, second, originating research or applying facts and methods of other fields to the satisfaction of these needs.

H. P. HALL, President
Tri-States Packers Association

We regard our laboratories in one light as intermediate agencies between the universities, other branches of industry and the canning industry. We take ideas and methods from these sources and attempt to apply them to the advantage of the canning industry, after such modification as may be necessary. An equally important function is to originate research where we find an industrial need which calls for treatment and where no leads are apparent. We have the usual laboratory tools, and the usual laboratory methods of attack. The experimental pack is the tool which we use in translating our laboratory findings into terms of commercial practice.

In illustrating the value of the experimental pack, how it came into being, and how it is used at present, I propose first to indicate how it was used in other branches of the canning industry, and will follow this by outlining a recent application to the canning of meats.

In 1918 the Research Laboratory planned and initiated a series of organized processing studies. These studies, which are still in progress, have had a common object in the removal of uncertainty from processing. They have taken form in a sequence of phases, each of which, while constituting a complete and independent unit of study, has been necessary to the objective.

The first step was the application of the thermocouple to the purposes of research in canning. This instrument, which had been widely used in other lines of industrial research, had not previously been used in canning studies, and material modifications were necessary to adopt it to its new use. With it information relating to the rates of penetration of heat in various foods was obtained. Soon after a parallel study was begun. Bacteria were isolated from all kinds of spoiled canned foods and were studied in various ways, but particular attention was given to the question of the heat resistance of their spores. Here, again, existing methods were not adequate in determining the resist-

ance of bacterial spores which were of high resistance to heat, and it was necessary to develop new methods for this purpose.

Having found the rate of penetration of heat in a given product and the resistance of spores of spoilage bacteria in that product, so-called "theoretical" processes were calculated. The mathematics involved in this calculation were developed specifically for this purpose by men connected with research in canning.

The next procedure was to test these theoretical processes, and it is at this point that the experimental packs came into play. After results on the experimental packs were obtained, the sum total of all the information available was used as the basis for the "recommended" processes which have been issued by the Research Laboratories. This, in general, is the plan of procedure which has been back of the process recommendations which have been issued for all standard vegetable products and several of the more unusual canned foods.

We are now able to report progress toward the establishment of processes for canned meat products. Our first tangible results in this connection were reported by Mr. Thompson before this section one year ago. His report dealt with the results of heat penetration studies which he had conducted in a number of canned meat products.

The bacteriological work has been under way on a full-time basis for about one year. In the beginning we have had to make haste slowly, although progress is not as slow as it might appear. If it wasn't for our experience with vegetable products the time necessary for preparation would have been much greater. Here we have been dealing with a class of canned foods with which previously we have had a rather limited experience.

Our first task has been to find a test organism which could be used for inoculating experimental packs of the various canned meats. In this connection we have centered primarily on the bacterial group known as the putrefactive anaerobes. This is the group which contains organisms most likely to be met with as spoilage agents in canned meats. We, therefore, made a search among organisms of this group for one which would produce spores of suitable resistance. By suitable resistance we really mean a high resistance, so that after inoculating experimental packs with these bacteria we could from our spoilage results obtain information which would indicate the process necessary to protect against spoilage. We made the search, hardly hoping to obtain bacteria of the resistance desired, but we had greater success than we expected.

As a first step, 19 cultures of putrefactive anaerobes were obtained from various sources throughout the country. In addition to this collection we added two strains from our own laboratory. These 21 strains were grown in a medium which would support anaerobic growth. From the entire lot we eliminated six strains which showed a very slow growth. The remaining 15 cultures were, after suitable incubation, put through a centrifuging process to concentrate the spores. These spore concentrates were used for heat resistance tests.

For our purposes we wished to obtain a strain having a minimum resistance of 4 to 6 hours at 212°F., but greater, if possible. Our heat-resistance tests eliminated 12 strains of anaerobes and left only our two laboratory strains. Eventually our organism, No. 3679, was selected as the principal test organism. This had a resistance of 12 hours at 212° F., and it is the most resistant putrefactive anaerobe which has been reported.

The first experimental packs were potted meat and corned beef hash. The test organism was heated in the laboratory in small tubes while suspended in these products, and its resistance to heat was determined at 210, 121, 230 and 239°F. The resistance values were as follows:

RESISTANCE AT TEMPERATURES STATED OF ANAEROBE No. 3679 WHEN SUSPENDED IN POTTED MEAT, pH 6.5, AND CORNED BEEF HASH, pH 6.0

Temperature	Spores suspended in	Spore resistance at temperature indicated: Survived	Killed
	Potted meat	12 H*-2 tubes pos., 8 neg.,	12H
212°F.	C. B. hash	11 H -7 tubes pos., 9 neg.,	12H
	Potted meat	260 M -4 tubes pos., 6 neg.,	280M
121°F.	C. B. hash	220 M -1 tube pos., 9 neg.,	240M
	Potted meat	70 M -1 tube pos., 9 neg.,	80M
230°F.	C. B. hash	80 M -2 tubes pos., 8 neg.,	90M
	Potted meat	20 M -3 tubes pos., 7 neg.,	25M
239°F.	C. B. hash	30 M -1 tube pos., 9 neg.,	35M

*H equal hours; M equal minutes.

These values, when taken in conjunction with the heat penetration data, gave the basis for calculated or theoretical processes for the two products. These processes were as follows:

POTTED MEATS

¼-lb. can, calculated process, 50 minutes at 240°F.
½-lb cans, calculated process, 75 minutes at 240°F.

CORNED BEEF HASH

Formula No. 1—1-lb. cans, calculated process(75 minutes at 240°F.

Formula No. 2—1-lb. cans, calculated process, 83 minutes at 240°F.

These calculated processes were used as the basis for the formulation of a series of processes to be used in the experimental packs.

The experimental packs were put up by the usual commercial procedure for these products. In each case approximately 4,200 cans were used. In the potted meat pack inoculations were made in two sizes of cans. In the corned beef hash pack a single size can was used, but two methods of preparation were involved. with both packs equal numbers of inoculated and uninoculated cans received each process. The uninoculated cans were the usual type "controls." The purpose of the controls is to give some idea as to the type of contamination which is already present and its resistance, and affords a basis for conclusions after a comparison of results for inoculated and control cans.

Tables I and II give the results to date of the incubation at 98°F. of the experimental packs of potted meat and corned beef hash. These tables also show the processes which were used in both cases. The incubation of these packs has been in progress for well over one month, and may be regarded as near completion. We have noted very little spoilage during the past two weeks.

The results which are shown in Tables I and II are exceptionally clean-cut. It has been unusual in our previous work to find spoilage restricted to the inoculated cans to the extent shown here. Note is to be made of the fact that spoilage in control cans is found in but one group (potted meat, ¼-lb. cans). This indicates a very low initial contamination and gives us assurance that all spoilage in the inoculated cans is due to the organism which was introduced.

The calculated and experimental results are in close accord for the common beef hash, while in the case of the potted meat the calculated processes are somewhat lower than the experimental results justify. No statements as to process recommendations will be made at this time, but will follow further incubation of these packs and the completion of certain supplementary laboratory resistance studies.

I think that this illustrates sufficiently for the time the use of the experimental pack in processing studies. It is, as I have already stated, a tool by which we test the validity of laboratory findings in their application to industrial practice. Taken by itself, and without adequate preparation and control, the experimental pack is too highly empirical a procedure to be regarded as reliable. When the converse is true, however, it is a most valuable aid.

TABLE I.—TENTATIVE RESULTS OF INCUBATION AT 98° F. OF EXPERIMENTAL PACKS OF POTTED MEAT INOCULATED WITH SPORES OF ORGANISM No. 2679

Process in mins. at 240° F.	¼-lb. cans Approx. pc. spoilage Cont. cans	¼-lb. cans Approx. pc. spoilage Inoc. cans	Process in mins at 240° F.	½-lb. cans Approx. pc. spoilage Cont. cans	½-lb. cans Approx. pc. spoilage Inoc. cans
35	5	100	50	0	100
50	0	100	60	0	100
60	0	90	75	0	40
70	0	0	90	0	0
80	0	0	105	0	0
90	0	0	120	0	0

TABLE II.—TENTATIVE RESULTS OF INCUBATION AT 98° F. OF EXPERIMENTAL PACKS OF CORNED BEEF HASH INOCULATED WITH SPORES OF ORGANISM No. 3679

Process in minutes at 240°F.	Formula No. 1 Approx. pc. spoilage Control cans	Formula No. 1 Approx. pc. spoilage Inoc. cans	Formula No. 2 Approx. pc. spoilage Control cans	Formula No. 2 Approx. pc. spoilage Inoc. cans
50	0	100	0	100
65	0	100	0	100
80	0	0	0	0
90	0	0	0	0
100	0	0	0	0
110	0	0	0	0

DR. TANNER: I should like to ask Dr. Cameron just what the zeroes mean.

DR. CAMERON: They mean flat cans.

DR. TANNER: I notice you use the term "Sterility Process."

DR. CAMERON: We should be a little bit easy in using that term, although with the meat packs I think we would have no thermophylic complications there. It might be that with potatoes we would have some complications of that sort. What we intend doing is to gradually raise the temperature of incubation, so that in the end we will have it at about fifty-five or sixty degrees Centigrade.

DR. TANNER: Was the meat in the flat cans in good shape?

DR. CAMERON: We have only tested a few of the flat cans. We felt if anything was going to go wrong in the flat cans we would find it there, rather than at the higher temperatures. This pack has been at incubation approaching two months now.

Possibly we should duplicate this test, using a smaller range of processing, but as far as the variations in procedure are concerned, the variations in the makeup of the products, I think we shall almost have to rely on the laboratories' tests I have told you about, taking the examples from various sources. If there is any great diversion, we shall have to follow it out, but if it checks up with the results we already have, that would not be necessary.

MR. LEWIS: May I ask, Dr. Cameron, whether the meats were in a commercial condition after the process?

DR. CAMERON: They are so far, I am quite sure, but whether they will be after I get through at sixty degrees Centigrade is another question.

CHAIRMAN TOLMAN: Are there any other questions that anyone wants to ask?

We are going to have the privilege of listening to Dr. Meyer, of the Hooper Foundation for Medical Research, on the general question of process control in California, and if there is no further discussion, we will have Dr. Meyer come forward at this time.

Process Control in California

By Dr. Meyer

SINCE 1925 California has been the only State in the Union, with practically the only health organization in the world that has instituted canning supervision. You will probably ask the question why such inspection service should have been introduced in California.

Our answer is simply this: Practical experience has shown that when instruments, equipment for sterilization, are used, and individual factors of supervision enter into it, one can never trust his organization without having a supervisory inspection force. You probably will question that. From my personal experience I have seen it to be the case, not only in the canning industry, but I have seen it to be the case in the milk pasteurization plants and elsewhere. In one city there are eighty-three cases of typhoid directly traceable to one of the best pasteurization plants. Everything according to sound principle was supposedly carried out, but the individual equation brought with it the calamity.

In many cases the industry has not appreciated that the handling of the retorts is not such a simple thing. Granted that men with experience are placed in charge of retorts, their mental calibre, judged by the psychiatrist, would frequently place some of these men in the class of morons.

All these things bring with them a necessity to supervise one of the most important functions in the canning industry, namely, the final rendering of the product safe. We preach from a public health point of view that the product has to be safe first; quality comes next, and I stick to that. We can always educate the public to eat certain foods, provided they are assured they are safe, but when they are not safe you have in many instances a development of fear and antagonism.

Our inspection service in California is guaranteed by an Act, Chapter 428, wh' h is as follows:

"An Act to regulate the conduct of canneries, to create a Division of Cannery Inspection to carry on such regulation, provide rules regulating the proper sanitation of canneries under the State Board of Health. (The State Board of Health was reorganized under Governor Young as a State Department of Public Health.)

"Section 1. It shall be unlawful for any person, firm, company, association or corporation in the State of California to engage in the commercial canning of fish or fish products, meat or meat products, which products are not under the supervision of the Food Inspection Service or the Division of Animal Industry, California State Department of Agriculture, the sterilization of which in the opinion of the California State Board of Health requires the use of a pressure cooker, without first obtaining a license from the State Board of Health."

Therefore, anybody who owns or operates a cannery in California, whether he is a reputable canner or a fly by night (we have such persons who fly around with a little pressure cooker which I sometimes call merely a stove pipe) and tries to process the products of agriculture, or other forms, can not operate a canning plant without obtaining first a license. If they want to obtain a license, they have to fill in the first form, the Application for Cannery License.

"Name of Organization. Location of Plant. Products to be Canned. Number of Retorts. Type of Retorts. Dimension of Retorts. Number of Mercury Thermometers. Number of Recording Thermometers. Make or Makes of Recording Thermometers."

All these things have to be stated, and in this connection I just want to tell you that even in anno Domini 1929 there were still people living in the less enlightened areas in California, down toward Los Angeles way, who had the bright idea that any type of equipment would be satisfactory to the State Board of Health.

There was one man who wanted to pack spinach, because he heard there was money in it, and he made application for a license. When the Chief Canning Inspector surveyed his plant he found exceedingly poor equipment, and as a retort he found merely a kind of stovepipe. Naturally the application for a license was refused. He began to kick to the higher-ups. You know how political wires are pulled if you do not agree with people. I was asked to see that type of equipment. I naturally could do only one thing. I could only support the Inspector. I told them a few things in plain language, and this man probably never will pack in his lifetime.

Possibly a license is granted. This is the type of form of license which has to be displayed in a canning plant. The license is granted. An Inspector of the Board of Inspection Service is detailed to make a thorough investigation of the equipment, of the types of thermometers available, checking the thermometers and the recording devices, and so forth.

The checking of the thermometers was found to be most important, because not infrequently, even in the best of plants, tnere were thermometers with differences of as much as ten degrees of Fahrenheit. It is astounding how carelessly this piece of equipment is cared for or is not thought to be important. The same thing is true of pressure gauges. They have to be inspected.

These inspections are made and the report is again filed regarding the equipment. Then a sanitary survey is made. As far as the sanitary surveys go, the plants as a whole, its facilities and so on are recorded, and recommendations are made on the other side of the page regarding what has to be changed before the man can operate. That usually goes on early in the beginning of the year, and is always repeated before a packing season of any certain product is started. As far as a sanitary survey is concerned, that is nothing new. Under Mussolini Il Duce in Italy they have a cannery inspection service which is in my mind perfect.

No cannery is permitted to operate in Italy without it has been inspected by three people, the Sanitary Officer of the District, the Provincial Health Officer, and a representative of the Istuto Conservatore Elimentari. These three render a detailed report. The printed forms cover six pages. This report is then filed and permission is extended by the Istuto to operate a cannery.

You here in Chicago are probably familiar with the poisoning cases you had last year due to Italian chiccherini. The moment the report was filed that these chiccherini contained poison Mussolini Il Duce closed up the plant. Would anybody dare do that here? The answer is probably no, but I think in many cases an Il Duce would be a good thing for the canning industry. It would help in many ways to overcome a certain type of objection which is mostly due to lack of information.

Having inspected the retort equipment, the next thing to do is to examine the personnel who handle the retorts, because Section 2 of the Act states:

"No person, firm, company, organization, association or corporation in the State of California shall permit any person, employee or individual to operate a steam controlled retort or retorts used in the commercial canning industry for the sterilization of agricultural food products, fish and fish products, meats or meat products, which meat or meat products are not under the inspection of the Bureau of Animal Industry, United States Department of Agriculture, unless said person, employee or individual shall first obtain a permit from the State Board of Health, which shall ascertain the qualifications of the applicant with a view to the preservation of Public Health, and such permit shall be revokable by the Board whenever the Public Health shall require such action."

These examinations are usually held by the Chief Cannery Inspector. At the beginning I went around with him myself, and it was really amazing to see what classes of men were put in charge of retorts, men not even knowing the fundamental

principles, some of them being utterly untrustworthy, some of them having the preconceived notion that what the Board tried to do was to put an additional burden on the canning industry. I shall never forget in my life that when I asked one of the men why the State Board used recording charts he said, "Oh, you mean 'stool pigeons.'" You can imagine what happened after that. That man never was made a retort operator. When a man has an idea that a recording chart is merely a stool pigeon, he is apt to draw the temperature curve by hand, and nobody will know what actually has gone on.

All of these things have to be watched, but I am prepared to say that at the present time an excellent class of men is in charge of the retorts, who know and are fully capable of meeting all emergencies.

Suppose a chart is found by the inspector which has a slight unevenness in a draw line, indicating that for a very short space of time the steam pressure dropped, or something else happened in the retort. The man has either to prolong the cook or stand afterwards to be responsible for the quarantining of the entire batch.

These curves which you see on the charts are not merely looked at by the inspector from a distance. They have to measure the exact temperature range by means of a pair of calipers. If there is a difference extending over a period of one to two minues that batch is subject to quarantine and further investigation before it is released.

When the inspectors have rendered their reports and the personnel have passed their examinations, the packing plant is ready to operate, and not before that.

You may at this moment perhaps ask who the inspectors are, what type of men we put into the inspector class. They are all civil service employees. The examinations they have to pass are anything but simple. The waiting list is usually very long. I remember some of the examinations, where we sat from nine o'clock in the morning until after five in the afternoon examining about seventy men, to be able to pick only three or four. Judging from that you can be assured the class of men is of the highest calibre. They are furthermore a class of men who know how to work and have to work. They have to be busy day and night, week-days and Sundays. In certain plants where spinach operations are going on for twenty-four hours of the day, two inspectors usually rotate. Each one works not the customary eight hours, but a customary sixteen hours, perhaps.

There are slack periods when they can recuperate from this strain, but you have to also keep in mind that during the packing season the men have to render an enormous amount of reports. The paper work connected with the inspection service is rather elaborate, and that brings us, then to the keeping of the records.

Each retort is furnished with the necessary temperature control devices. In order to prevent fraud, the charts are consecutively numbered and stamped, and are only issued upon special request to the Director of the State Department of Public Health.

Here is marked the name of the canner, and the name of the inspector who issued that particular chart. It is countersigned by the Chief Cannery Inspector with the usual sign. The product here is marked as spinach, and on this side are two curves.

The inspector has one function. He has to check these temperature curves and has to enter into the space here the code number of the particular batch. In vegetable canning, batch coding or retort coding is entirely in vogue. In reality it is enforced, and that has saved many a canner from a great deal of grief. My casual examination has shown me a lot of products are not properly coded.

Coding on the label is a most unsatisfactory thing from the standpoint of a food official. Labels can be pulled off or replaced in the course of the passing along of the goods, and I know until coding was introduced that we had to seize certain goods and recall them in California and one packer received fish products which he never had packed in his lifetime. In fact, he received all the junk which that particular jobber did not have to keep. He could not deny it, because there was no identification code on it.

Suppose, now, that something happens some morning to certain types of chickens in cans, and the State Board of Health is beginning to make seizures. Instead of confining it to one small batch, certain code numbers, all the chickens of that particular producer are going to vanish from the market of California. We have no other recourse to follow.

I remember, when we first proposed batch coding, that the industry accused me of ruining the industry. Today I must say everybody is more than pleased that I stood firm and insisted upon the batch coding being done.

Accompanying the keeping of these temperature curves there is a daily production record, of which there are three sheets. The white original is kept by the State Board of Health, the second one is kept by the packer, and the third one is filed for any future reference at a neutral point. This daily production record has a lot of columns: Temperature chart number, Batch, Retort number, Size of Can, Number of Containers in the retort, Code Number, Time in, Time up, Time out, Mercury temperature, Chart reading, Gauge pressure. That is all recorded. At the end there is a space for entering the size of the containers, number of containers to the case, number of full cases and fractions of cases.

As a result of this information, for the first time even the large packers in California know what they are packing. Before that they never knew. The inspection service keeps for them a complete record. These records are maintained by the man who is in charge of the retorts, because the retort is the central point to which all the cans have to go.

In time certain precautions had to be introduced, in old canneries, for example, where the route by which the cans traveled to the retort was rather in a round-about way, we had to provide means that every can would really go to the retort. Quite often it happened that cans would fall off and then would be thrown into a basket with sterilized cans or with unsterilized cans, and that was probably responsible for some trouble. That is now all organized.

For the special produce we have additional information which we collect. Here is a spinach canner's report. It is a production sheet, and the inspector signs here the following statement:

"I have personally witnessed the cook of batches so and so, and timed the same by my watch. Above are the readings on the instruments of the retorts in use at the time of inspection. I also observed all mercury and reading thermometers and pressure gauges on retorts and found same to be in proper working order and agreement, except as follows. Released for shipment batches so and so. Packed blank date. Covered by Process Record Number blank. Chart number blank. Except the following material being held for restraining order. Variety of spinach. Location grown. How shipped. Elapse of time from field to plant. How packed. Condition of raw material: Dirty, leaves, weeds, blossom tops. Length of time raw material is held at plant before sorting. How is raw material held over night? Sorting. Washing, Blanch time. Temperature. Methods. Sizes of cans in use. Coding at the plant. Number of cans examined for seams. Opinion on seams. Appearance of pack, and so on. Instructions to superintendent." All these things are given on this sheet.

What does that mean? Let me illustrate by example:

Last year, while I was in London, the British Minister of Health did not believe that such an organization could exist. I said, "All right." I shall gladly make a test. You go out in the open market and buy any American canned product, preferably Californian, and you bring it in, and I will probably be able to tell you, because I know the first two letters of the codes, who packed it and where it was packed."

I know these codes. Nobody else knows them aside from the inspectors.

He did it. He brought in a can of asparagus. The label had been torn off. I could immediately tell it was from California and that it was packed in the month of April. The rest of the code I did not know, but I sent a cable, and four hours later I received a complete statement in which not only the entire interpretation of the code was given, but the quality of the raw material, when it came to the plant, when the asparagus was washed, when put into the can, when put into the retort, who the inspector was, who stood by, and the total number of cans involved.

You can realize what an impression that makes on a health officer if you can give that information, even if the product has been accused of being responsible for a death. He immediately shuts down and awaits further developments. If you can not give him this information, he knows your method of supervision has been lax and probably the police power he wants to assert is fully justified.

As a result of these things, even when canned foods have been maliciously accused we have always been able to get a fair and immediate hearing, and thus prevent a great deal of trouble to the canning industry.

The same type of report is kept for fish, with other questions on it. The same thing is kept for olives. There are a number of blanks for other products which I did not bring with me. There are blanks for tomatoes. For the tomatoes there are two report blanks, the Tomato Field Examination, and the Cannery Examination.

Should any inspector find that something is done improperly, he has no right to release it. It is his duty to prevent its release. The next procedure would be to place it under a restraining order, and this is the type of restraining order which is filled out:

"The following listed material must be held on the premises until the same is released in writing by this department. Sec-

tion 2979, Political Code. Name of Canner. Number of Batch. Cook. Code. Reason it is held."

That is made out on duplicate blanks and they are sent to the laboratory. The laboratory will probably request that one per cent of the sample of the batch be withdrawn and examined. If the examination of the sample reveals some fundamental defects either in the processing, that the content is not sterile, or that the raw material is poor, or was not ready when it was put in, or that there is something wrong with the seam, naturally the matter is referred to me for further decision, and I merely write under the laboratory findings, "Batch so and so may be released." I have no power to release it. That is in the hands of the Division of Foods and Drugs of the State Department of Public Health. I can recommend that it be released, or I can recommend that it be destroyed.

I must say that during the past two years no decision of that sort has ever been questioned. There is sometimes involved $10,000 worth of canned foods. If I say they should be dumped at the deepest portion of Los Angeles harbor, it is done. If it can be reconditioned, all right. That we only permit under certain conditions.

Reventing is never permitted. We have sufficient evidence there so that reventing is absolutely forbidden, because it usually leads to trouble.

If the contents can be salvaged in one way or another, we do it. With fish, for example, you can sometimes make cat food of it, but I am getting rather leery about this cat food, because a woman got rather seriously poisoned by eating a couple of cans of cat food. Irrespective of the fact that it was plainly labeled as cats' food, she used it herself.

I do not know just what to do about such things. You have to realize that in all such undertakings we do not protect the mentally alert human being, or the mentally alert citizen. We have to protect the one class of people who rarely think and who put anything offered them into their mouths and eat it. Therefore it is a much safer procedure never to let anything out that there is a possibility of it being used as food.

I question the wisdom of putting out a lot of dog foods in cans. It might be wise to have a very bizarre type of container, in order to warn the people, but even so, when you have oddly shaped or triangular bottles for bichloride people still take bichloride tablets when they have a bad headache from the moonshine they drank the night before. There is a great deal of psychology in this that you have to watch.

Probably you will ask what an inspection service of this sort costs. It cost last year about $80,000, and covers an enormous number of commodities. It covers all the fish and all the olives. It covers asparagus, beans, beets, carrots, celery, peas, pumpkins, spinach, tomatoes, vegetable salad, and the general overhead expense of each. As it is quite likely that certain people are going into the canning of chicken (we hear that there are three plants going to be put up this year in California), we will probably have this particular thing to supervise, and the same principles and system which I briefly sketched here will be applied to the chicken canners. If somebody would go and can some product like ham, or so on, we also would have to supervise that.

This is now a definitely fixed procedure. The support for this canning inspection service comes directly from the canning industry by mutual agreement. They collect the money and transfer it to the Comptroller of the State of California, and he administers the expenses so that the principles of the state departments are used in making out expense accounts, and in allowing mileage for automobiles. The distances to be covered in California are enormous. The Chief Cannery Inspectors, during a year, may sometimes cover between forty and forty-five thousand miles. That is all to be paid out of this inspection service.

At first the industry felt that it was a big mistake to have a lot of wise looking inspectors coming in who knew nothing about the commercial end of canning. Well, maybe so, but in many instances a well trained inspector can be of tremendous assistance to a superintendent.

At the beginning there was also the feeling that a lot of secrets of the canning industry were going to be divulged if we had inspections and inspectors. That feeling has disappeared in California completely. Today I can sit around a table with the superintendents and they tell me everything from A to Z that they are doing, and among themselves they exchange views as to the most practical procedures to be used, because their main thought is a safe, commercially acceptable product to the public, and when that principle has once taken hold, then we are working according to the old standards, one for all and all for one.

It is perfectly true that a lot of people can find some very interesting new things in the course of canning, but why should not others also be the beneficiaries of that? If you have trouble with a canned product, you are not the only one who is going to suffer. The whole industry is going to suffer by it.

One of the greatest packers in California, at the beginning of all the troubles we had in the canning industry, suggested we quit packing olives. I said, "Yes, you can do that. Always lay down and wait until something else happens. From my experience I will prophesy there is going to be grief in other products, and the only thing to do is to investigate your trouble from every point of view."

What we want to be is a fact-finding investigator. We do not want to revolutionize the industry, but through a gradual process of evolution to bring it to a state of perfection, and it is most gratifying to see that the Directors of the National Canners Association have felt that the time has arrived at which standardized cooks for commodities, vegetable and fish commodities, can be accepted, adopted and recommended, and it is coming to that in the meat canning industry just as well, only you are a couple of years behind us.

I venture to say I shall see you here again in 1935 and that we will have standardized processes for all the meat products, and that secrets will be nonexistent. I thank you. (Prolonged applause.)

CHAIRMAN TOLMAN: I want to express my own appreciation of everyone here for this exceedingly interesting talk that you have given us, Dr. Meyer. I suppose you will be glad to answer any questions anyone might want to ask.

DR. MEYER: Surely.

CHAIRMAN TOLMAN: Does anyone want to ask Dr. Meyer any questions?

MR. BRICKMAN: What is the approximate size of a batch?

DR. MEYER: One retort. We recode every retort. If they start to operate at eight o'clock in the morning they code to noon, and then change the code when they resume work after lunch, although a few industries day code.

One industry refused utterly to do anything but day coding. They are in a mess now, because the packages which they have to segregate are enormously large. If they had had batch coding probably the trouble could have been solved in two months. Now it will require ten months or a year.

Such experiences always lead to changes of practice. I venture to say this canner will batch code in the future.

CHAIRMAN TOLMAN: How are these cans coded?

DR. MEYER: We use either the die coding or the ink coding. Ink coding is naturally the most expensive, because it is all hand coding, and requires a large personnel to go around with the stamps and the ink pads. Die coding is embossing into the lid, and that can be used when you have a half-day code. Batch coding also requires hand coding.

In the fish packing industry they have some interesting codes directly attached to the closing machines. They operate, as I say, for half a day, and then they change the number. If you look at some of the California vegetable cans you will have sometimes six letters and five or more figures. Every one has a definite meaning.

They asked us at the beginning whether we would be satisfied with label coding. I tell you frankly, label coding is a great disadvantage, because the labels can be torn off and nobody knows what the can has. It should be on the container.

The American Can Company has some excellent means of coding. Always when a problem of this sort arises the American or Continental Can Company have a new device which can be put on. In this respect we worked with them.

DR. CAMERON: In respect to the ink coding, could that be removed?

DR. MEYER: It can be removed, but in our experience we have always been able to trace the batches. The majority of them are using die coding, but small organizations, to save expense, use the other.

MMR. H. V. GRIFFITH (Armour & Co., Chicago, Illinois): Does the State of California prescribe and enforce the processes?

DR. MEYER: I am glad you brought up that point. Let me illustrate by an example. We will enforce the processes.

Artichokes are being packed in California. Three years ago we decided that something should be done. If you cook artichokes you have nothing but a mush, and last year we found we should acidify the product to a degree that it would give the artichoke heart a flavor of pickle. Naturally, the trade had to be acquainted with that fact. Do you think anybody said they could not do it? They merely said, "If that is your order, we are going to try to do it and sell the product. If it can not be done, we will stop putting up artichokes."

We sat around the table and discussed every aspect, and not one said it could not be done and he did not want to try. So we issued an order which brings with it the inspection of artichokes which will cost probably $1,200, and which will bring with it an

inspector who will take samples of the blanching solution, to determine if the degree of acidity remains the same if the addition of acetic acid re-enforces the blanching solution, or if they neutralize too much of the acid. The inspector will remove twenty cans after a run. He will also see that the content of each can is kept accurately, because it can not be over sixty per cent of artichokes, so these people have had to install packing by weight. That is all being done and it is all being enforced, and it is a wonderful educational system.

When it comes to changes in the cooks, if we find out that certain cooks are too vigorous, we probably cut down five minutes at the beginning of the season. We issue an order that allows them to use lower cooks. Cooks are being checked by the methods Dr. Cameron spoke about. Experimental packs are checked before they are released.

All these things go over my desk before the inspection service enforces it, but the final thing is that the packer is convinced that this is the only right thing to do. If he is not convinced, the inspection service means nothing. The whole principle is education in the beginning.

Today, the best friends I have are canners with whom I had some tilts before.

CHAIRMAN TOLMAN: If there is no further discussion, we have one final piece of business that has to be attended to, and that is the report of the Nominating Committee and the election of officers for next year. I will ask Dr. Vollertsen to present the report of his committee.

THE ELECTION

DR. J. J. VOLLERTSEN (Armour & Co., Chicago, Illinois): We suggest the name of Mr. Fred Baker, of the United Packers, Chicago, Illinois, as Chairman, and Dr. C. R. Moulton, of Chicago, Illinois, as Secretary.

CHAIRMAN TOLMAN: You have heard the recommendation of the Nominating Committee. Are there any further nominations?

MR. W. LEE LEWIS: Mr. Chairman, I move the acceptance of the report of the committee and that the Secretary be instructed to cast a ballot for the nominees as stated.

The motion was severally seconded.

CHAIRMAN TOLMAN: It has been moved and seconded that the report of the Nominating Committee be accepted and the Secretary be instructed to cast a ballot for them. Is there any discussion?

All in favor of this motion, say "Aye." Contrary, "No." The motion is carried.

There is no other business on the program and I know of no further business. If anyone has any further business, now is the time for it. If not, we stand adjourned.

The meeting adjourned at twelve-thirty o'clock.

General Session

Friday Morning, January 24, 1930, 9:30 A. M.

E. B. Cosgrove, Le Seuer, Minnesota, President of the Association, presiding.

THE meeting convened at nine-thirty o'clock, Mr. E. B. Cosgrove, Le Seuer, Minnesota, President of the Association, presiding.

PRESIDENT COSGROVE: We will have the report of the Finance Committee, Mr. B. C. Nott, Chairman.

MR. B. C. NOTT (Grand Rapids, Michigan): With reference to the financial report, I doubt if it will be necessary to go into detail due to the fact that this report has been printed and broadcast in the form of the Secretary and Treasurer's report.

We are glad to say, however, in just hitting the high spots that the estimated budget for 1929 was $265,027.86 and the actual amount expended was $253,480.31. There was a suggested budget made for 1930 which totals $265,936.67. For your information, the estimated income for 1930 is $278,582.85. Therefore, you see we will have, or expect to have, ample funds to take care of what we have in mind. This is a suggested budget, however, and if necessary can be changed at the May meeting.

I wish to say further, for your information, that the uncollected membership dues for 1929 and previous years is $31,389.78.

That constitutes my report. If there are any questions I shall be glad to answer them.

PRESIDENT COSGROVE: Gentlemen, we have here the report of the Chairman of the Tomato Section, which we will file and make a part of the printed report of the convention.

TOMATO SECTION REPORT

Report from the Chairman of the Tomato and Tomato Products Section:

"To the President, Officers and Board of Directors of the National Canners Association: Herewith is submitted the report of your Chairman for the past year:

"The Tomato Section this year has been an active one; in May, 1926, a recommendation of a 50 per cent tariff increase was requested from the United States Tariff Commission. In October, 1927, the Tariff Commission began their investigations as to costs, etc., of packing tomatoes and tomato paste, with the result in May, 1928, that a hearing was granted before the above Commission. Since this time, the National Canners Association, various State Associations, and numerous canner members have diligently worked with various members of the United States Senate and Congress and before Committees of Congress in an effort to have the tariff on canned tomatoes and tomato paste increased from the now too low and ridiculous rate of 15 per cent to 60 per cent. The result is that the lower House of Congress passed a 40 per cent tariff, but when sent to the United States Senate, the Senate Committee raised this to 50 per cent and it is now pending passage before the Senate at 50 per cent, and we believe and hope when the Senate finally agrees and passes this figure, the House will concur in the same.

"There were imported into this country in 1929 nearly 200,000,000 pounds of canned tomatoes, or, roughly, the equivalent of 14,000,000 dozen of No. 2 tomatoes, more than double the imports of 1928, with a value of more than $11,000,000. Tomato paste imported in 1929 exceeds 10,000,000 pounds, with a value of about $1,500,000, or an increase of 75 per cent over 1928, so why not keep this money at home for ourselves. No doubt, tomato juice will soon be imported into the United States. The present tariff on raw (not fresh) tomatoes is ½ cent per pound, with 3 cents recommended by the House and 2½ cents by the Senate in the new proposed Tariff Act. We hope the 3 cents per pound will finally prevail, because the imports of raw tomatoes have averaged over a three-year period, according to reports from the Bureau of Economics, Department of Agriculture, more than 110,000,000 pounds, mostly from the Mexican West Coast.

In 1929, there were planted in the United States 285,840 acres of tomatoes, which yielded 1,377,700 tons, averaging 4.8 tons per acre against 3.8 tons in 1928, with a value of $20,420,000. The average price paid per ton in 1929 was $14.92 against $14.17 in 1928. Should the same number of cases per ton in 1929 be realized as in 1928, the pack for 1929 would be about 14,000,000 cases of No. 3 tomatoes, which, when considering no carry over was had from 1928, places tomatoes and tomato products in a strong position for 1930.

"In May of 1929, your Board discussed a bill before Congress pertaining to grades and standardization of canned vegetables, whereupon your chairman sent letters asking opinions and advice as to the grades and grading on canned tomatoes to the following associations:

"Tri-State Packers Association (Maryland, Delaware and New Jersey).
"Indiana Canners Association.
"Illinois Canners Association.
"Michigan Canners Association.
"Association of New York State Canners, Inc.
"The Ohio Canners Association.
"Virginia Canners Association.
"Western Canners Association.
"Pennsylvania Canners Association.
"Canners League of California.
"Utah Canners Association."

"Replies were received from each and the consensus of opinion seemed to be the definitions and standards as recommended by

the National Canners Association in their information circular of February 11, 1928 would be entirely satisfactory. A few had no definite ideas but favored some plan of grading.

"The officers elected on January 21, 1930, for the ensuing year were:

"Chairman—Mr. H. G. Maxson, F. E. Booth Company, Inc., San Francisco, Calif.

"Secretary—Mr. J. A. Kilian, Marshfield, Mo.

"Respectfully submitted, W. Earle Withgott, Chairman, Tomato and Tomato Products Section of the N. C. A.

"The attached resolutions were offered and passed and are now presented to the Board of Directors for their consideration. (None.)"

PRESIDENT COSGROVE: We also have the report of the Baked Bean Section.

BAKED BEAN SECTION REPORT

Report from the Chairman of the Baked Bean Section:

"Whereas, Foreign beans imported during the current season have been remarkable for their freedom from culls, split beans, stones and other objectionable material, thus giving evidence of care in preparation which is not equalled at present in the preparation of domestic pea beans, and

"Whereas, It is, in our judgment, imperative that the grading standards for domestic pea beans be substantially raised if the popularity and general acceptance of domestic pea beans is to be increased from year to year, now therefore be it

"RESOLVED, That we, the undersigned, respectively representing the corporations appearing after our names, being engaged in the canning of pea beans, and having formed ourselves into a committee, do most earnestly urge the several Bean Jobbers Associations in the United States to raise the existing standards for choice hand-picked pea beans by decreasing the allowable tolerance for culls and other objectionable material to one and one-half per cent (1½%) and the maximum moisture content to seventeen per cent (17%), and be it further

"RESOLVED, That this committee shall, and it does hereby urgently request the several Bean Jobbers Associations above mentioned to adopt as the official basis for transactions in pea beans, the grades established by the Bureau of Agricultural Economics of the United States Department of Agriculture, and the Inspection Service already organized for the application of the said Federal Grades, this being in our judgment the best available agency for the impartial determination of grades for pea beans, and be it further

"RESOLVED, That the Secretary of the committee be and is hereby directed to send true copies of this resolution to the Michigan Bean Jobbers Association, the New York State Bean Jobbers Association, and to the Chief Bureau of Agricultural Economics, United States Department of Agriculture."

"Dated at Chicago, Illinois, January 19, 1930.

"Signed—W. K. Gearen, representing The Van Camp Packing Company; J. G. Bennett, H. J. Heinz; Leland S. Argall, Marshall Canning Company; James Moore, Snider Packing Corporation; L. G. Kessler, American Packing Corporation; Stewart Rose, London Packing Company; C. M. Walters, Libby, McNeill & Libby; H. W. Cleveland, The Quaker Maid Company Inc.; P. J. Aubineau, Reid, Murdock & Co.; William H. Ritter, P. J. Ritter Company; Frank Gerber, Fremont Canning Company; Arthur C. Dorrance, Campbell Soup Company."

PRESIDENT COSGROVE: Are there Chairmen of any other sections present? As soon as some of these section Chairmen appear they can file their reports with the Secretary.

We will have the report of the Committee on Resolutions by Mr. E. E. Chase, Jr.

MR. E. E. CHASE, JR. (San Jose, California): With your permission in acting on the report of the Resolutions Committee, each resolution will be read and we will ask for objections. If there are no objections, we will go through the entire report and act on the report.

RESOLUTIONS

The following resolutions were adopted at the closing session of the National Canners Association in convention at Chicago, Illinois, Friday morning, January 24, 1930.

WHEREAS, Much of the success of the twenty-third annual convention of the National Canners Association has been contributed by the speakers at our general and sectional meetings and by the discussion leaders at our informal conferences on technical problems, be it therefore

RESOLVED, That our thanks and appreciation be extended to: Mr. W. H. Albers, Mr. Eugene S. Berthiaume, Mr. Gordon H. Kellogg, Mr. Willis W. Johnson, Mr. Thomas F. Branham, Mr. Arthur P. Williams, Dr. Paul B. Dunbar, Dr. Morris Fishbein, Miss Lita Bane, Mr. Robert J. Roulston, Hon. Millard E. Tydings, Mr. A. T. Erwin, Mr. James Henderson, Mr. J. C. Walker, Mr. W. E. Vaughn, Mr. O. M. Watson, Mr. W. J. Zaumeyer, Mr. K. P. Kimball, Mr. W. C. Geagley, Mr. W. E. Braithwaite, Mr. Wroe Alderson, Mr. P. H. H. Dunn, Mr. William H. Harrison, Mr. D. F. Sampson, Mr. H. K. Hayes, Mr. D. N. Shoemaker, Mr. G. N. Hoffer, Mrs. Bess Gearhart Morrison, Mr. Lawrence G. Warder, Mr. A. D. Radebaugh, Mr. H. A. Jones, Dr. W. H. Eddy, Mr. F. C. Gaylord, Mr. H. C. Diehl, Mr. C. O. Ball, Mr. L. L. Harter, Mr. H. E. Turley, Mr. A. E. Stevenson, Mr. J. MacGillivray.

RESOLVED, That we express our appreciation to the trade press and the daily press for their courteous and comprehensive reports of the Convention's activities.

WHEREAS, A considerable share of the success of this convention is due to the friendly co-operation of the National Food Brokers Association, the American Wholesale Grocers Association, the National Wholesale Grocers Association, the National Association of Retail Grocers, the National Chain Store Association and the Canning Machinery and Supplies Association, be it therefore

BEN NOTT

W. R. Roach & Co., Ex-President N. C. A.

RESOLVED, That this Association again expresses its appreciation of this co-operation with hopes that these friendly relations will continue to strengthen with the years.

WHEREAS, We have been greatly impressed by the thorough scholarly and practical treatment of his subject by Dr. Leverett S. Lyon of the Institute of Economics of the Brookings Institution, in the pamphlet entitled "Some Trends in the Marketing of Canned Foods," and

WHEREAS, This pamphlet is of much interest and great value to all engaged in the canning trade, be it

RESOLVED, That this Association hereby expresses to Dr. Lyon its appreciation of his work and calls the attention of the membership to the valuable facts and conclusions contained in the treatise.

RESOLVED, That we express our appreciation to the American Can Company for their continued efforts toward making this convention a success, and we compliment the company on the unique and unusual entertainment provided on Thursday night, January 23rd.

"Larke oaks from little acorns grow" may well be applied to the history of the National Canners Association.

Some of us well remember the meeting of about a dozen earnest men in the Iroquois Hotel, at Buffalo, New York, when the Association was organized and our beloved Secretary appointed, at a most modest salary—when it could be paid.

Since that time during the twenty-three years of its existence, it has grown and expanded until today it is recognized as one

of the largest trade associations, if not the largest, in the country, extending its membership throughout the length and breadth of the land and even as far as the Hawaiian Islands.

During all this time among those who have given so generously of their time and efforts in the development of the Association, there has been one man, Frank E. Gorrell, who has stood at the helm and given of his all, as he had guided every activity and fostered every fine idea that has been suggested—a man of vision, ability and of wonderful tact, who seldom, if ever, loses a friend, and is ever making more.

To him we delight in giving our devotion, friendship and love.

WHEREAS, There has come to us from the Northland of Minnesota a warm hearted and sturdy leader, and

WHEREAS, This leader and friend has for the year just closed presided over the destinies of this Association competently and well, at great personal sacrifice, now therefore be it

RESOLVED, That we express to E. B. Cosgrove, our retiring President, our unstinted thanks for the good work he has done and the harmony and progress which he has fostered in this organization, and be it further

RESOLVED, That we wish him all success and happiness in all the years to come, and that in testimony of these sentiments an engrossed copy of this resolution be presented to Mr. Cosgrove and a copy be preserved in the records of the Association.

RESOLVED, That authority be delegated to the President to act for this Association in the selection of the location for the next convention.

MR. E. E. CHASE, JR.: I move the adoption of the resolutions as submitted.

The motion was seconded, put to a vote and carried.

PRESIDENT COSGROVE: Royal F. Clark will give us the report of the Conference Committee and also the report of the General Advertising Committee. Mr. Clark.

REPORT OF CONFERENCE COMMITTEE

Those present were: L. A. Sears, Warrensburg Canning Company, Warrensburg, Ill.; H. A. Baker, American Can Company, Chicago; P. H. H. Dunn, Department of Commerce, Washington, D. C.; W. E. Braithwaite, Department of Commerce, Washington, D. C.; J. H. Kline, National Brokers Association, Cleveland, Ohio; Harry L. Cannon, H. P. Cannon & Son, Inc., Bridgeville, Del.; R. H. Rowe, Secretary, American Wholesale Grocers Association, Washington, D. C.; S. J. Steele, Vice-President, Continental Can Company, Chicago; F. A. Wilder, Pratt-Low Preserving Company, Santa Clara, Calif.; James Moore, Snider Packing Corporation, Rochester, N. Y.; John W. Morey, Morey Mercantile Company, Denver Colo.; E. A. Hill, Griggs, Cooper & Co., St. Paul, Minn.; Leo. J. Bushey, Oakford & Fahnestock, Peoria, Ill.; Preston McKinney, Canners League of California, San Francisco, Calif.; E. F. Trego, Hoopeston Canning Company, Hoopeston, Ill.; L. R. Wing, Luman R. Wing & Co., Chicago; H. E. MacConaughey, Hawaiian Pineapple Company, San Francisco, Calif.; A. M. Lester, California Packing Corporation, San Francisco, Calif.; Frank E. Gorrell, National Canners Association, Washington, D. C.; H. M. Loomis, National Canners Association, Washington, D. C.; Royal F. Clark, Central Wisconsin Canneries, Beaver Dam, Wis.; Robert J. Roulston, Durand, McNeil & Horner, Chicago; E. M. Burns, Northwest Canners Association, Portland, Ore.; B. E. Maling, Ray-Maling Company, Inc., Hillsboro, Ore.; H. E. Gardner, Ridenour Baker Grocery Company, Kansas City, Mo.; S. Ort Bowman, Evans-Burtnett Company, Harrisburg, Pa.; Frank Gerber, Fremont, Mich.; S. B. Steele, Steele-Wedeles Company, Chicago; C. E. Wilcox, Sprague, Warner & Co., Chicago; William Ely, New York City; Roy C. Ossman, William Edwards Company, Cleveland, Ohio; E. E. Chase, Richmond Chase Company, San Jose, Calif.; Arthur P. Williams, R. C. Williams & Co., Inc., New York City.

Roy F. Clark was elected chairman of the conference and A. P. Williams, Secretary.

Mr. Clark read a letter from Mr. Albers, President of Chain Store Association, recommending a reduction in the sizes of shipping units, particularly for sea foods and soups. After some discussion, motion was made and adopted that the matter be passed over until the next meeting of the Committee.

A letter was presented from the Western Classification Committee stating that there is a tendency to lower the tests for fiber boxes previously adopted by the Conference Committee. Motion was made and carried that the Committee reaffirm its previous recommendation and so notify the Classification Committee and Box Manufacturers.

It was recommended that the net weight list be revised and that the matter be referred to the executive offices of each association interested to take the necessary action on this recommendation. Motion was carried.

Mr. Wilder read a report of the Committee on Simplification of Containers. After the report was made, Mr. Dunn explained that the Department of Commerce has no authority to require can manufacturers or canners to make or use only such sizes as might be agreed upon, but will use its best efforts, educational or otherwise, to get the standard sizes generally adopted in practice. Mr. Dunn also stated that the suggested list covered only fruit, vegetable and milk cans, and did not include fish or meat cans. Mr. Clark, therefore, suggested that any action taken by the Committee would apply only to fruits and vegetables. Mr. MacConaughey thought that the pineapple canners would like to have an opportunity to give these recommendations some consideration and investigation before accepting them.

As it was pointed out that it might take considerable time for canners to use up their present stock of labels and to make the necessary adjustments in machinery, etc., Mr. Dunn explained that one, two or probably three years would have to be allowed to use up old labels and to make other necessary changes, also that if the Committee recommendations are adopted, the Department would then want to take them up with individual canners, probably with the help of local associations, and secure the consent of at least 80 per cent of the canners to the adoption of these recommended sizes.

After considerable discussion, the following resolution was finally adopted:

RESOLVED, That the Conference Committee endorse in principle the list of can sizes recommended by the Department of Commerce and recommend that canners confer together on the future elimination, if practicable, of such of these sizes as appear superfluous and that the Canners Committee report back to the June meeting of the whole Committee.

The Committee took no action on the subject of dating of cans.

No increase in the number of items on which pack and stock statistics are being collected by the Census Bureau was recommended.

Mr. Clark made a brief report on the present status of the Mapes Bill and the proposed advertising campaign.

Meeting adjourned.

H. M. Loomis, Secretary pro tem.

MR. ROYAL F. CLARK (Beaver Dam, Wisconsin): In addition to these subjects, the general advertising subject was discussed at the meeting and that, of course, refers to the Mapes Bill. As the legislation has not been passed, there is very little that I can report or that the committee can report this morning.

PRESIDENT COSGROVE: Is that a dual report?

MR. CLARK: Yes. I move the adoption of these reports.

The motion was seconded, put to a vote and carried.

PRESIDENT COSGROVE: Mr. Richard Dickinson will give us the report of the Committee on Scientific Research.

REPORT OF THE COMMITTEE ON SCIENTIFIC RESEARCH

"During the past year the work in all activities in the field of this committee has made satisfying progress.

"In Home Economics, contracts with schools, extension services, dietitians, editors and other professional groups have been continued and increased.

"Correspondence, bulletins sent on request, special articles for publication and public addresses have all helped to disseminate research results through the many channels of public information.

"The Bureau of Raw Products Research continues to encourage new research projects and serves as a means of co-ordinating the work of numerous agricultural research agencies.

"The improvement of varieties of canners crops and the combating of diseases and insect pests, comprise the more important projects.

"The Research Laboratories have continued work on the following major lines:

"Springer Perforation Studies, Bacteriological Survey, Vitamin Studies, Heat Penetration and Processing Studies.

"Also, they have made special investimations on:

"Holding of Vined Peas, Consistency of Canned Pumpkin, Ethylene Treatment of Tomatoes, Effect of Freezing on Fruit and Vegetables, Storage of Pineapple, Changes in Cut-Out Syrups in Fruits, Changes in Drained Weights in Fruits, Conductivity and Specific Cravity of Tomato Products.

"In addition, there were the usual service calls from members which tend to increase in number from year to year.

"An important part of the research work of the Association is to get the results of investigations incorporated into practice in members' plants.

"For this purpose there was begun at this convention a series of conferences between research workers and production men from the factories, which, it is hoped, will continue to prove profitable.

"Respectfully submitted, Richard Dickinson, Chairman."

MR. RICHARD DICKINSON (Eureka, Illinois): I just want to add informally a word about those conferences. I have been to them and I was extremely gratified at the interest shown by production men in the factories in these conferences and talks with the research workers. They not only asked questions and discussed them in the meeting, but they broke up into groups after the meeting and talked it over.

I understand the big idea started from our Secretary, Mr. Gorrell. Wherever it came from, it is a mighty good idea and I think it is going to be wonderful.

I move the adoption of the report.

The motion was seconded, put to a vote and carried.

RICHARD DICKINSON

PRESIDENT COSGROVE: I shall introduce the Chairman of the Corn Section, Mr. Hartman.

CORN SECTION REPORT

W. P. HARTMAN: We introduced a little novelty during our section meeting yesterday in the hopes of getting out the crowd by having the Pennsylvania Railroad Quartette sing two or three times during the session. The quartette came to the meeting without any charge whatever to the Association. The room was fairly well filled and all the speakers who were on the program presented splendid papers, brief and very much to the point.

The section endorsed the simplification of containers subject in a general sort of way and referred it back to the proper committee for further consideration.

As a result of the address of Mr. Warder on "Crop Hazard," a motion was put and carried that the President appoint a strong committee to work with the insurance companies in an effort to work out a feasible, practical line of crop hazard insurance. We assured Mr. Warder we would bring this matter to the attention of the President in the hope that that committee would be appointed at an early date. The President of his company and other men high up in the insurance game would be glad to sit in and try to work out crop hazard insurance.

I think, Mr. President, that covers the high lights of the section meeting.

I move the adoption of this report.

The motion was seconded, put to a vote and carried.

PRESIDENT COSGROVE: Is Mr. Wilder in the room? (Not present.) Is there any other section Chairman who has not been heard from? Mr. C. D. Minton of the Pumpkin Section.

PUMPKIN SECTION REPORT

MR. C. D. MINTON (Forest Grove, Oregon): Mr. Chairman, I wish to report on the Pumpkin Section. You know when the first baby is born everybody is a little bit nervous. This was our first meeting of the Pumpkin Section, but after the nervousness wore off and we got down to business we seemed to get quite a good deal of information out of the program.

We find from the speakers on the program that there is quite a divergence of opinion as to packing pumpkin for the housewife and for the baker. Our baker friends want rather a coarse pumpkin with quite a little of the peeling in it so as to make it look very pretty, all of which I think was very good business. The housewife seems to want a finer grain of pumpkin than that necessary for the pie baker.

We had a very interesting talk from Professor Erwin and also one from Mr. H. R. Smith. The new officers elected were:

Mr. Richard Dickinson, Jr., Chairman.

Mr. R. S. Thorne, Secretary.

PRESIDENT COSGROVE: A motion to receive and refer to the Board of Directors the report of the Pumpkin Section is in order.

A motion was made to accept the report of the Pumpkin Section, seconded and carried.

PRESIDENT COSGROVE: Are the Chairmen of any other sections here who have not reported?

MEAT SECTION REPORT

"The technical committee of the Meat Section has held three meetings during the year. Specific detailed plans were made for the research work carried on for the section and the program for the annual meeting was discussed and approved.

"The research work has been along three lines. First, under Dr. Cameron's immediate direction and with the advice of Dr. Bigelow, a laboratory program was carried out in order to obtain a desirable test organism to use in experimental packs for the determination of adequate processes. Such organisms are now available and have been used in experimental packs of corned beef hash and potted meat. A second set of experimental packs will be put down this month.

"The second research project has been a bacteriological survey of rock salts used in the curing of meats for canning. This work has been carried out by Dr. Yesair under Dr. Cameron's direction.

"The third research project has been carried on by Dr. Esty of the Western Laboratory. Heat resistance studies on Cl. botulinum in meat juices have been made. The effect of curing agents on Cl. botulinum spores in test tube cultures has been studied.

"The Chairman has attended meetings of the directors of the Association and kept in touch with the affairs of the section by constant direct contact.

"The Secretary of the section attended a meeting called by Mr. Gorrell to discuss tariff matters. He also attended a meeting of the Program Committee of the National Association and a meeting of the Research Committee.

"The section now has twenty-two members.

"Respectfully submitted, L. M. Tolman, Chairman; C. R. Moulton, Secretary."

BEET SECTION REPORT

"Mr. C. D. Minton elected Chairman, Mr. F. L. Shannon, Vice-Chairman, and Mr. J. E. De Masters, Secretary.

"We are grateful to Mr. Hartman of the Corn Section for livening up the meeting with furnishing us the services of the Pennsylvania Railroad Rainbow Quartette. I believe a feature of this kind adds to the interest and relieves monotony of the technical part of the meeting.

"The section moves for publication of bulletin describing operation, sizes and standards similar to bulletins published for other commodities."

PRESIDENT COSGROVE: Are there any other reports of committees. If not, we are going to give Mr. Wilder a chance to be the first to report to the brand new President.

One of our good friends from California is going to catch an eleven-forty train and, barring an accident, I am going to catch a twelve-forty train. That is our apology for being prompt and on time.

Before I turn over the office of President of the National Canners Association to my worthy and beloved successor, there are just a few things that I want to say to you. Last year when I came to this meeting I came down more or less in a daze. It never seemed to occur to me before I came down here that I would be expected to talk. No one mentioned that to me. Out in our country when we get a new job, instead of talking about it, we take off our coats and go to work. I rather expected that that was going to be expected of me here.

The year is behind me and I am going to say almost as little in leaving you as I did in joining you. It has been a most delightful year to me. It has been, by all odds, the most fun and the most pleasant year I have known in all my life. I started off with a rush and a bang in Southern California, and it seems as though the tempo never dropped down until this morning. I feel now that I am going to settle back to an ordinary life and probably it is not going to be half the pleasure that the last year has been, as I have so many friends from California and

from New York whom I am going to miss seeing as often as I have in the past year.

I could not help but think last night as I sat at the show and saw my successor rise to the stage that the ancient custom of maintaining the man as President after election of another has its humorous side. I felt a good deal like a firecracker on the fifth of July.

It has been a pleasure, Frank, to have worked with you, and it has been a pleasure to have known you.

I think the thing that probably gives you the greatest kick in the year's work is the immediate response from the membership when a crisis arises. Something comes up and you are in a turmoil and a fuss and a stew as to just what to do about it. You call on the whole board, the ex-president, and the members of the Administrative Council, and 100 per cent they respond to their wise counsel and advice.

I did say in my first talk at California that I thought the presidency was a kind of training school to make a man worth a darn in later years. I believe that more than ever today. I think my course has been slighted a little bit, but as I stagger along the trail in years to come I am going to sit at the feet of the older heads and continue to hope to learn.

This man I am about to introduce to you I met for the first time out in California. He started me off with a laugh and he has kept me laughing ever since. When he has not kept me laughing, he has kept me wondering how much money he was going to get of mine, either in golf or some other warm sport. There is not a chap whom I have met in the year that I liked so instantly and so completely. It is a pleasure to turn the responsibilities of the National Canners Association over to Mr. Ed Hume.

The audience arose and applauded.

GAVEL PRESENTED NEW PRESIDENT

MR. E. E. CHASE, SR. (San Jose, California): Mr. Retiring President, I should like to say a word or two before it is necessary to acknowledge our new President. Ed, your California friends and allegiance of the Canners' League have commissioned me to convey their best wishes and to say to you that they will always be back of you, and that while this has been a great honor to you, they claim the right to participate in that honor because you have been taken from an intimate group of the Canners' League and we claim that some of the glory that has come to you is going to be reflected on the rest of us.

We want to present you with a token of our high regard and our friendship so that you may have it for a very refinite purpose during your term of office and which probably you will wish to keep after you have retired.

(A handsome gavel with a gold band was handed to President Hume.)

This is the emblem of authority. We want you to know that not only from the Canners' League but from my own experience I can say that every member of this Association will be ready to answer your call if you ever find the necessity of appealing to them. Our retiring President has just stated that he could always rely upon the support and the help of the members of this organization. I think perhaps that is one of the thoughts that will sustain you at all times if any problems come up—the knowledge that you have back of you hosts of friends and the most wonderful Association there is in existence. We have every good wish for you, Ed, and know that you are going to make good in every way, shape and manner. (Applause.)

Mr. Ed Hume took the chair.

PRESIDENT HUME: Thank you very much, Mr. Chase.

Members of the National Canners Association, I had a few thoughts a minute ago, but the hammer has knocked them out. I feel highly honored and I am very appreciative of the confidence that you have shown in me by electing me to the presidency of your organization. I shall do my best to respect that confidence.

At the sound advice of Mr. Gorrell and with the support of the strong Board of Directors and the Executive Committee I shall use every effort to carry forward the best traditions of this organization. My time from now on, Mr. Gorrell, will be in your hands. I shall give such part of my time as you think is necessary. It makes little difference what part it is.

A lot of my friends, and particularly those in California, may feel that I am inclined to treat serious matters in rather a jocular vein, that I look too much to the humorous side of things. While I am a strong believer that the element of humor plays a more important part in a person's life than many people would think, still in accepting this office I am sincerely impressed with the responsibilities of it and I can assure you that no jokes will be poked at the improper time. (Laughter.)

I know the people here want to catch trains. All these papers here are not a speech, do not think that for a minute.

The Association to me is comparable with a man. The heart of the Association lies in Washington, the office and the personnel at Washington. The frame-work of the man is comparable to the Executive Committee and to the Board of Directors. The muscles of the man lie in the membership. The strength of the man lies in the activity of those muscles. The more they are exercised, the more they are used, the stronger will the Association become. If they are neglected, in spite of the fact that he has a strong heart and a large frame, he may not be very strong. I ask that the members use the facilities of the Association—use your muscles.

The life's blood of this Association, in my opinion, is in its Code of Ethics. I should like to see every member of this organization study that Code of Ethics and religiously adhere to it, and appoint himself as a committee of one to see that that Code of Ethics is observed, because only in the observance of that Code of Ethics will the strength of this Association go out and mean what it should mean to the consuming public.

The seal of this Association, if the Code of Ethics is religiously adhered to by the membership, will be a seal of strength to the Association.

I think my slogan—all of you have heard this Amos 'n Andy episode and the Pepsodent closing phrase of "Use Pepsodent twice a day; see your dentist twice a year"—is going to be: "Consult Frank Gorrell twice a day; use your own judgment twice a year." (Laughter and Applause.)

TO PRESIDENT COSGROVE

MR. E. F. TREGO (Hoopeston, Illinois): I have a few remarks to make in regard to Ward Cosgrove. Last fall I had the pleasure of going to California with him. Really, I have not been able to make up my mind whether he is a Scotchman or a New England Presbyterian, or what. Anyway, on the way out the first thing Ward said was (there happened to be three in the party), "We will count our money and before we get off the train we will divide it back again in proportionate parts so that in all this gambling and so forth nobody will lose any money." (Laughter.) I want to tell you that I had never had that pulled on me before. Frank Gorrell was there. After two or three days Frank and I began to wonder what was the matter with him. He had worn one suit of clothes all the time and that was unusual. He looked kind of tacky. We became worried about it. After we got back this fall we still talked about it a little bit and wondered what was wrong.

We thought at this time we would try to remedy that. A few of his friends went to the swellest place in town to buy him a complete outfit of men's furnishings. We got a real outfit. He will be proud of it. Along with this, we went to the cheapest trunk place in town to which we could go and bought a little suitcase for him to carry. We have that here now. Now, Ward, will you come up here and try these on?

(Here was presented a small wardrobe trunk, fashioned like a suitcase, made of red and white striped cloth. The offering was made conditional that he tried on the clothes before the crowd. A small cheap "dirby" was first placed on his head; a suit of clothes of "rakish" design, and cheapest kind, with a red and white striped shirt of the "sports style"—large flat collar and necktie to suit, made up the outfit.)

MR. E. B. COSGROVE: I want to extend to you my deep and sincere thanks. Of course, I do not know what I am going to do with that cheap little case, but this clothes, these hat, and these shirt! He did not tell you that I left my clothes down at the camp and when I arrived in San Francisco half my clothes were missing.

MR. TREGO: We are proud of you, boy, and we hope the friendship you have made is going to more than repay you for the work you have done.

The audience arose and applauded.

MR. COSGROVE: Really, I am not going to let Ed Trego get off as easily as that. Trego told all about the Scotch arrangement. It really was not fair or nice of him. If it had not been for that original arrangement, he would be out on the Coast yet. (Laughter.)

It is awfully nice of you to have done this for me. I have so many good and dear friends whom I have met this year and I hope I live for a thousand years so that I can know all of you a thousand years. Thank you. (Applause.)

PRESIDENT HUME: Will Mr, Wilder give his report on Simplification of Containers?

REPORT OF THE COMMITTEE ON SIMPLIFICATION OF CONTAINERS

"Your committee has made some progress during the past year, in so far as, with Mr. Dunn's report in hand, we are now able to recommend as standard sizes of cans for fruits and vegetables for the National Canners Association a list of twenty-

seven cans, which number we hope to be able to reduce to twenty-five.

"This range in sizes should be fully adequate to take care of the entire pack of fruit and vegetables, as no can which varies more than 1/32 of an inch from some other size that is included in the list, and which at present is used on as much as 1/10 of 1 per cent of the pack of these goods has been omitted. Ninety-five per cent of the demand is for the sizes included in the list, although it takes in only about 40 per cent of the sizes now in use. Put the other way, only 5 per cent of the demand will be affected, although we eliminate 60 per cent of the sizes. The average present demand for each size of cans retained is approximately thirty times as great as the average present demand for each size eliminated.

"Mr. Dunn's report herewith giving his findings as a result of the survey is included as an essential part of this report. This and the list herewith recommended by the committee, together with the explanation of this list, which was read by Mr. Wilder at the Conference with Distributors, completes the report of work done.

"It is further recommended that, in order to make our present move effective in reducing the number of sizes of cans used instead of encouraging an increase, the National Canners Association bring this list to the attention of each section, with the request that each section specify which of the cans on this list is necessary to the requirements of the packers in that section. Naturally, every effort should be made to keep down to the minimum the number of sizes of cans in which any commodity is to be packed. Although the Standard List includes at least twenty-five sizes of cans, as few as three or four of these standard sizes should suffice for each commodity.

"It is further recommended that the National Canners Association direct a questionnaire to the members of the Association to determine each canner's preference in the matter of the two sizes of No. 2 cans (307x408 and 307x409) and the two sizes of No. ¼ cans (401x205 and 401x206). Also let the matter be brought to the attention of the various local associations with a request for helpful suggestions from them as to how the elimination of one each of the above sizes can best be secured. F. A. Wilder, Chairman.

"Simplification of containers includes the standardization of the sizes of the containers, as well as the reduction in their number to the minimum which will serve the needs of the public.

"Standardization of Sizes. The standardization of the sizes of the cans is of vital importance, as it is essential to fair dealing between manufacturers, canners, distributors, consumers. It puts a stop to the tendency of cans going by given names to shrink in size when there are many can makers and many canners and fierce competition. The standardization of can sizes should cover both outside dimensions and capacities. For each can of given outside dimensions, a minimum capacity should be established by the National Canners Association, so that for practical purposes the content of any given can on the approved list, properly packed, will be the same regardless of the party manufacturing it.

"Standardization of Names. The simplification of containers should also extend to the standardization of the names of the containers, as well as the sizes of the containers, adopted as standard by the National Canners Association.

"Reduction in Number of Sizes. You are familiar with the method followed by Mr. Dunn in selecting certain sizes to be included in the list of standard sizes, and in rejecting other sizes because of their present use being limited, or because of their being of virtually the same size as the cans recommended for adoption by the Association.

"This method is the only one that is feasible in a case of this kind. It is based on facts, that is, on things as they are. It cannot be gainsaid. Of course, if nothing had gone before, and the canners were starting today with a clean sheet, it would be possible to devise the ideal schedule of sizes on a perfect scale of diameters, heights and capacities, so that with the minimum number of sizes every need of every commodity would be satisfied, with cans cut from the tinplate to the very best advantage. But the actual situation is just the reverse. A great industry already exists, and the tremendous demand for certain commodities in certain cans, which has developed from actual usage, is proof that such cans are suited to the needs of said commodities. Any system of can sizes should be founded on the most popular of the containers now in use.

"It was because the survey had not yet been completed, and sufficient data were not then available, that the committee could make no recommendation last year. For the survey to be a success, much information of a confidential nature had to be collected, which, for obvious reasons, made it necessary that only Mr. Dunn, or others in a similar neutral position, have knowledge of the full details. His report is conclusive. We agree with everything he has done. However, in my opinion, the Association should go a step further and eliminate two sizes which are included in the list.

"You will note in Mr. Dunn's list the cans: 307x408—No. 2 Standard (Coast) and 307x409—No. 2 Standard (East), also cans, 401x205—No. 1 Flat (Coast) and 401x206—No. 1 Tuna, No. 1 Fl. (California).

"The test of whether or not a certain size of can should be included in the standard list being whether the quantity used has been more than 1/10 of 1 per cent of the total with the dimensions of the can varying more than 1/32 of an inch from some other size, all of the above sizes had to be included in the list, because all of them are used in large quantities and they vary 1/16 of an inch in size. Nevertheless, one each of these cans should be eliminated.

ROYAL F. CLARK

"No. 2 Cans. The No. 2 can is the unit on which most canned vegetable statistics are based. Certainly such a unit should be a fixed quantity. I do not know how the Coast canners will receive the suggestion, but I believe the can, 307x408, should be dropped. The larger can, 307x409, costs only ½ of 1 per cent more, although it has a capacity 1½ per cent greater. To make the change would put the Coast canner and can makers to some trouble and expense, but progress without some waste is practically impossible. No new building is erected on a busy thoroughfare in a great city without an old building first being torn down.

"I shall be disappointed if the Coast canners are unwilling to change to the Eastern Standard No. 2 can. The change should be up rather than down, because, with the 4 9/16 inch can, the canner, and in the end the consumer, gets the more for his money. The greater the value that can be given the consumer for his money, with the profit the same to the manufacturer, the faster the business will grow. However, if the Coast canners are obdurate, I would certainly advocate that the Eastern canners, in self-defense, change to the Coast Standard No. 2 can. It will be better to have one size only, even if not the more economical container. Perhaps the best way to settle this matter will be to put it to a vote of the entire membership of the Association, all agreeing before the vote is taken to be governed by the will of the majority.

"In any event, now is the time to make this change. It would be most unfortunate, at the very time we are trying to apply common sense to our problems, to perpetuate two sizes of cans with no other excuse for their being than that they both happen to be in use in a large way at this time.

"In the long run, the canners and can makers who will be put to the expense of making the change will be gainers, because of the interchangeability of all No. 2 cans in production and distribution throughout the country; and, of course, the distributors and consumers will directly benefit by the change.

"No. 1¼ Can. Regarding the cans 401x205 and 401x206, the ideal can for the canner also handling No. 2½ cans is the 401x205½, because such cans exactly fit No. 2½ cases; but it being thought desirable to avoid dimensions in 1/32's of an inch, I would recommend the can 401x205 for adoption as better suited to a No. 2½ case than the can 401x206. This would also do away with the possibility of canners of certain commodities changing to the use of the smaller can in competition with other canners packing the same commodities in the larger of these cans.

"System of Nomenclature. Any system of nomenclature adopted for the list of standard cans should eliminate all reference to products which, for various reasons, happen to be associated with certain containers.

"With the reduced number of containers and a more diversified use of cans, there will be an increasing number of products used in each size of can.

"It is hardly necessary to dwell on the absurdity of referring to a can, say, of Kadota Figs 3 1/16 inches in diameter by 4 11/16 inches in height as 1 pound Salmon Kadota Figs, or to a can of Tomato Juice 2 11/16 inches in diameter by 3 inches in height as Regular Tamale Tomato Juice, or to a can of Lamb Stew 3 inches in diameter by 4 7/16 inches in height as Dogchow Lamb Stew. The system of nomenclature that seems to me most practicable is that based on:

"Classification by Diameters. A common term (so far as is feasible with the plan of continuing the use of certain terms now generally applied to certain containers) being applied to cans of the same diameter.

"Differentiation within Classes by Height. The relative height of the cans of the same diameter being defined in a descending scale by the terms:

"Tall, Short, Squat, Flat.

"The term 'Tall' to be applied to the tallest can of a given diameter in general use.

"The term 'Short' to be applied to the can between 80 per cent and 100 per cent of the height of the 'Tall' can of the same diameter.

"The term 'Squat' to be applied to the can between 60 per cent and 80 per cent of the height of the 'Tall' can of the same diameter.

"The term 'Flat' to be applied to the can 40 per cent to 60 per cent of the height of the 'Tall' can of the same diameter.

"When certain cans like the regular No. 2½ can and the tallest of the 3 7/16 inch diameter (or No. 2) can are so outstanding as to serve as the yard stick or unit of measure of the other sizes, they are not further defined by the word 'Tall,' although they actually are No. 2½ Tall and No. 2 Tall cans. The shorter the term used to describe a certain container, the better, as it keeps down expense in wires, billing, etc. In fact, it is unfortunate that the No. 2½ can should have received that comparatively long name in the first place. Incidentally, the present No. 2½ can is not the same can, that is the same size can, as the can which received this name in the first place. The original can was measurably larger.

"Full Gallon. Beginning with the largest can, 'Full Gallon' is recommended for the official name; because this term is already in use, the can has a capacity of a full gallon, and such a name cannot be confused with anything else. No. 12 sounds a little more businesslike, but it consists of two words, which makes it no better for actual use than 'Full Gallon.'

"No. 10, No. 3, No. 2½, and No. 1¼. If the present system of nomenclature is not to be scrapped altogether and some new, comprehensive scheme adopted—and we think it wise to follow present usage as far as is feasible with consistency—there can be no criticism of No. 10, or No. 3, or No. 2¼ as applied to the cans going by those names. The better name for the can of the same diameter as the No. 2½ can (4 1/16 inches) and half, or practically half of its height, is No. 1¼ rather than No. 2½ Flat, although the latter would be a logical name.

"No. 2 Class. The class of cans with the diameter 3 7/16 inches should all be known as No. 2s, the tallest, or master can, simply as No. 2. The can 4 inches in height should be known as No. 2 short; the can 3 2/16 inches in height as a No. 2 Squat; and the can 2 4/16 inches in height, which is half, or practically half, the height of the No. 2 can, as No. 2 Flat.

"No. 303. There being only one can in this class, I cannot think of a better name than simply No. 303.

"No. 1 Class. In so far as most of the cans 3 1/16 inches in diameter are now known as number ones of one kind or another, I think we should continue to call these cans No. 1s. This will mean that the can 4 11/16 inches in height will be known as a No. 1 Tall; the can 4 inches in height as a No. 1 Short; and the can 2 8/16 inches in height as a No. 1 Flat.

"No. 300, No. 300X. I would suggest that the can 3 inches in diameter and 4 7/16 inches in height, which is now commonly referred to as '16 ounce Bean,' 'Dog Chow,' be known as No. 300, and the can 4 9/16 inches in height, which is now commonly referred to as 'Tall Milk' be known as No. 300X.

"2 11/16 Diameter Class. Next comes the numerous class of cans 2 11/16 inches in diameter. As long as no general term has ever been applied to this group, I think the best course for us to pursue will be to keep away from any general term, describing such cans by whatever name or nickname seems most appropriate.

"The term 'Pint' will be a satisfactory name for the can 6 inches in height, because this can is now known by that name, and it has a capacity of something over a pint. Similarly, the can 4 8/16 inches in height would be known as a ¾ pint.

"I think the canners should aim ultimately to get away altogether from the use of the term No. 1, in connection with any of the 2 11/16 inches in diameter class. This will mean the elimination of such names as 'No. 1 Eastern Oyster' as applied to the can 4 inches in height. This can being so much smaller than most of the 3 1/16 inches in diameter cans which we propose to call No. 1s, the same commodity will frequently be packed in some one of the larger cans, as well as in the 2 11/16 inches by 4 inches can, in which case there would always be the possibility of confusion in the case the 2 11/16 inches by 4 inches can were to be known as some kind of a No. 1. The name 'Picnic,' which is already applied to the can in many sections of the country, seems to me an ideal one. It is short and also fool-proof. During the transition period I would suggest coupling the name 'No. 1 Eastern' with the name 'Picnic' for this can. In the course of time the trade would come to realize that 'Picnic' and 'No. 1 Eastern' are one and the same thing; and the latter term could be dropped.

"There does not seem to be much excuse for two cans, one 3 inches and the other 3¼ inches in height. However, though the difference in capacity is only ¾ of an ounce of water, the 3¼ inches can is almost 10 per cent larger than the 3 inches can. Since, in many cases, comparatively high cost commodities are packed in these cans, such a percentage cannot be ignored. This being the case, and both sizes being the case, and both sizes being at present used in large quantities, the two sizes are included in the standard list. Both cans are known as 8 ounce cans, though the capacity of the smaller can is less than 8 ounces of water, and the content of the larger can, in the case of many commodities, is over 9 ounces. I would get around this by calling them 8 Z Tall and 8 Z Short, respectively. Canners and distributors would think of 'Z' as meaning 'Oz.' as in the past, yet by substituting 'Z' for 'Oz.' we would get away from any danger of coming into conflict with the law. You will note that we have avoided altogether the use of the terms lbs. and ozs. in defining the various containers. This is highly desirable where commodities of such varying specific gravities are used in the different cans.

"Baby Can. The name 'Baby' seems to me as good as any for the can 2 8/16 inches in diameter by 2 11/16 inches in height. It is appropriate for a small can. It will serve as well as 'Baby Milk' when the can contains milk, and will also serve when some other commodity is packed in this container.

"5 Z and 6 Z. I cannot think of better names than the '5 oz.' and '6 oz.' by which the cans 2 2/16 inches in diameter and 2 14/16 inches and 3 8/16 inches respectively in height, are known at present. The use of weights, however, in describing containers, is always objectionable because of their inaccuracy in describing the content of the cans, which in the case of some commodities might lead to legal complications. The term '5 oz.' is very likely to be misleading on account of the capacity of the can being less than 5 ounces of water. Perhaps it will be well to avoid all possibility of criticism by calling these cans '5 Z' and '6 Z,' respectively, or if the longer name is preferred, 'No. 5 Z' and 'No. 6 Z,' respectively.

"In so far as there are at present, in most cases, many names in use for most of the containers, there will have to be a good deal of revamping anyway, no matter what names are chosen for the various containers, if we adopt specific names or nicknames for each can on the Standard List. This being the case, I think it wise to be as consistent as possible, though this will mean scrapping a few names that might be retained.

"Change in the names of certain sizes of cans to altogether new names, I know from our experience in California when we adopted the new grades for fruits, will cause a surprisingly small amount of extra trouble. After the first few months, only the old-timers will refer to cans by their old names. This is the way it is today with cans, which, before the days of the Pure Food Law were referred to as 3 lb., 2 lb., etc. Even now you occasionally hear an old-timer say 2½ lb. or Gallon when he means No. 2½ and No. 10.

CAPACITY OUNCES ADVANTAGE OF WATER AT 68° F.

Dimensions	Full Can Sealed	Name
202x214	4.83	5Z
202x308	6.04	6Z
208x211	6.04	Baby
211x300	7.90	8Z Short
211x304	8.66	8Z Tall
211x400	10.91	Picnic (No. 1 Eastern)
211x408	12.42	¾ Pint
211x600	16.93	Pint
300x407	*15.00	No. 300
300x409	*15.43	No. 300 X
301x208	8.21	No. 1 Flat
301x400	14.00	No. 1 Short
301x411	16.65	No. 1 Tall
303x406	*16.71	No. 303
307x204	9.18	No. 2 Flat
307x302	13.46	No. 2 Squat
307x400	17.74	No. 2 Short
307x408	20.19	No. 2
307x409	20.50	
401x205	13.35	No. 1¼
401x206	13.78	
401x411	29.71	No. 2½
404x414	34.99	No. 3
603x700	109.13	No. 10
603x812	137.95	Full Gallon
300x308x308		No. 1 Square
300x308x604		No. 2½ Square

* Estimated Capacity not yet checked by National Canners Association Laboratory.

PRESIDENT HUME: Do I hear a motion that the report be adopted?

A motion was made, seconded carried to adopt the report of the Committee on Simplification of Containers.

PRESIDENT HUME: I shall now read the Standing Committees for the coming year.

STANDING COMMITTEES

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W. P. Hartman, Grand Rapids, Michigan.
James Moore, Rochester, N. Y.

SECRETARY GORRELL: The Finance Committee has to be approved by the convention.

PRESIDENT HUME: I will entertain a motion for the approval of the names on the Finance Committee.

MR. HARTMAN: I so move.

MR. DAWSON: I second the motion.

The motion was put to a vote and carried.

PRESIDENT HUME: Are there any further matters the members would like to take up at this time before we adjourn?

Before we offer a motion to adjourn and now that I have collected my thoughts (when anybody gives me something I forget everything I ever knew), I appreciate more than I can say this expression from the California boys. I am reminded of a story that a fellow told here the other day. Giving a present before I do something is like the fellow who winked at the girl in the dark, but only half the story has been told. I have been chosen for the position but you do not know how I am going to fill it; therefore, I think it is a great deal like that story.

Nevertheless, I highly appreciate the thoughts behind this. I will now entertain a motion to adjourn.

The motion was seconded, put to a vote and carried.

PRESIDENT HUME: The 1930 convention is now adjourned.

The meeting adjourned at ten-thirty o'clock.

ANNUAL REPORT OF THE RESEARCH LABORATORIES, NATIONAL CANNERS ASSOCIATION 1929

By W. D. BIGELOW AND J. RUSSELL ESTEY

INTRODUCTORY STATEMENT

PROGRESS has been made during the year in all of the major projects of both laboratories and a number of special investigations have been conducted.

Heat penetration has been determined of some products which have not been studied previously, and heat penetration work has also been done in connection with processing studies of several products.

The field laboratory has continued the bacteriological survey of canning plants and has also been utilized in connection with several special examinations and for the purpose of giving service to the plants of our members in its vicinity. The date secured by the work of the field laboratory has made it possible to suggest a remedy for specific instances of thermophilic contamination in the plants of a number of our members and also to suggest some general precautions that should be taken by vegetable canners for the purpose of preventing or controlling such contamination. A study has been begun of the possibility of removing such contamination from equipment which has become infected.

Progress has been made in both laboratories in the springer-perforation studies with certain types of canned fruits. The Western Laboratory has put up a number of experimental packs which give additional evidence of the importance of adequate exhaust and adequate headspace in delaying the formation of springers. In this connection it should be emphasized that, although an adequate headspace is important for the purpose of delaying the formation of springers, it does not, in any sense, obviate the necessity of sealing the cans while the contents are at as high a temperature as practicable. Both exhaust and headspace are of the utmost importance with all products which are likely otherwise to give trouble from perforations or springers.

In the reports of the Washington Laboratory in previous years it has been pointed out that the acidity of canned fruits has an unexpected relation to the formation of springers and perforations. It has been demonstrated that the greatest amount of trouble from perforations and springers in red fruits occurs in those products of the lowest acidity, and the results that have been reported by this laboratory have led us to suggest that increase in the acidity of some products might be expected to delay the occurrence of both perforations and springers. During the past year experimental packs designed to study that specific question have been put up, and the preliminary results thus far obtained appear to substantiate the hypothesis.

Vitamin studies have been conducted with pears, pineapples and tomatoes. The results obtained with tomatoes are especially interesting in connection with numerous inquiries that have been made regarding the relative vitamin content of vine-ripened tomatoes and tomatoes picked green and allowed to ripen during subsequent storage. The work done during the last year has shown that vine-ripened tomatoes are substantially higher in the antiscorbutic vitamin (Vitamin C) than artificially ripened tomatoes. Notwithstanding the wide publicity that has been given the fact that canning does not appreciably destroy the Vitamin C content of ripe tomatoes, many consumers are led to use artificially ripened tomatoes during the Winter by the belief that they are richer in Vitamin C than canned tomatoes. Many consumers have even gone to the trouble of crushing artificially ripened tomatoes during the winter to secure tomato juice for the same reason. This question has even been introduced into the tariff debates, the suggestion being made that the tariff on tomatoes was an anti-vitamin tariff, and not in the interests of public health. Under these circumstances, it is interesting to note that commercially canned tomatoes, being packed from field ripened stock, are richer in Vitamin C than raw tomatoes available during the winter months.

The work reported a year ago on the deterioration of peas held for too long a time after vining has been continued. During the last season attention has been given to the influence of temperature on this deterioration. It has been found when peas are chilled in cold water immediately after vining they may be held in cold storage for as long a time as two days without greater deterioration in the canned product than occurs in from two to four hours during the ordinary canning conditions.

Both laboratories have inaugurated studies on the consistency of canned pumpkin, and have put up experimental packs in connection with the subject. It appears that any desired degree of consistency can be obtained by modifications of the method of wilting and pressing. The yield in cans per ton, however, for any specified consistency of the finished product varies with the composition of the raw material, especially with respect to the percent of starch. Moreover, the expense of manufacture and the simplicity of equipment are both influenced by the amount of starch in the raw pumpkin.

During the last year the propaganda conducted by the State of South Carolina with respect to the iodin content of fruits and vegetables grown within that State have led many of our members to ask what information is available regarding the iodin content of fruits and vegetables grown in other sections of the country. This question has been considered by both laboratories and it has seemed wise to devote considerable time to it. A survey has been made of the literature bearing on the question in order that our laboratories may be able to keep in touch with all organizations that are studying the question. It is recognized that a compilation of all available information regarding the iodin content of the fruits and vegetables, as well as the water supply of all parts of the country, is in the interest of public health. It is also recognized that this information should be increased by further study.

It stands to reason that iodin is not distributed along geographic lines. It is believed that the iodin content of fruits and vegetables depends on the iodin content of the soils in which they are grown and of the ground water which supplies those soils. The iodin content of soils and ground water depends on the composition of the geological formations, by the decomposition of which the soil was formed, and perhaps to some extent upon the geological structures through which the ground water has passed.

Some localities grow fruits and vegetables richer in iodin than others. Such localities may be large or small. They may include a section of the country embracing a considerable part of the territory of several states, or they may be limited to small areas. It is believed that those parts of the country whose fruits and vegetables are relatively rich in iodin will contain some areas where the iodin content is low. It is also believed that those parts of the country in which the iodin content of fruits and vegetables is low will contain some areas in which iodin is much more abundant. Some of these areas are probably so small and their lines so sharply defined that an individual canner may be putting up the product from some farms much richer in iodin than the products of other farms delivered to his plant.

The survey of the literature on this subject which we have made shows that the amount of work involved in securing the information which should be accumulated in the interests of public health is greater than could be carried on by one laboratory. This work should be guided by the information now available regarding the incidence of goiter and the iodin content of ground waters. Such information is in the hands of state institutions, and can best be accumulated and studied along state lines. It is suggested, therefore, that the State Experiment Stations should be encouraged to give this matter their attention. It is interesting to note that the experiment stations of several states are already taking this question up and other states are considering the advisability of giving it their attention.

During the last year an increasing amount of service has been given to individual members of the Association. The Western Branch Laboratory reports the number of jobs that have been handled for individual members. These jobs include samples sent to the laboratory for examination, and also questions submitted by individual members which it was possible to answer by means of laboratory studies. The Washington Laboratory has not tabulated the studies that have been made for members in connection with which samples were not submitted.

The reports of individual service rendered by the two Laboratories, therefore, are not on the same basis, but both show that our increasing knowledge of the industry has made it possible not only to extend the research in various lines, but also to render an increasing amount of service to individual members of the Association. In addition to this, many problems are presented to us by personal calls or by letter which can be handled on the basis of information already available.

During the year about 5,000 letters were written by the two Laboratories, or which over 3,300 contained technological information, often involving considerable study in their preparation.

During the year revised editions were issued of Bulletin No. 19-L, "Vitamins in Canned Foods," and Bulletin No. 23-L, "Storage Temperatures for Canned Fruits."

The following articles were contributed to scientific journals by members of the staffs of the two laboratories:

Certain Acid Tolerant Bacteria Causing Spoilage in Canned Foods. C. T. Townsend. Zentralblatt fur Bakteriologie, Parasitenkunde und Infektionskrankheiten, II abt., Band 78, pp.161-172, July, 1299.

Comparative Study of Toxic and Non-toxic Strains of Cl. Parabotulinum. XXV. C. T. Townsend. Journal of Infectious Diseases, Vol. 45, pp. 87-93, August, 1929.

An Exploration Electrode to Determine the Hydrogenion Concentration of Fluids in Living Tissue. H. Ehrenberg. Journal of Laboratory and Clinical Medicine, Vol. 15, pp. 181-184, November, 1929.

Vitamins in Canned Foods. Martha M. Kramer, Walter H. Eddy and E. F. Kohman. Industrial and Engineering Chemistry, Vol. 21, pp. 859, September, 1929.

The Scope and Findings of Field Work During the Canning Season of 1928. E. J. Cameron. Journal of Bacteriology, Vol. 17, pp. 31.

One additional article has been sent to a scientific journal for publication, and several others are in the course of preparation.

ANNUAL REPORT OF THE WASHINGTON LABORATORY

HEAT PENETRATION. By G. S. Slusser.

Heat penetration studies have been made on turnip greens, triple succotash, mixed vegetables, spinach, sardines, corned beef hash and potted meat. With the exception of spinach and sardines, no previous heat penetration tests have been made on these products.

TURNIP GREENS—The heat penetration of turnip greens was determined in No. 2, 3 and 10 cans. As in the case of spinach, heat penetration was most rapid in cans having the lowest weights of drained solids. Unlike spinach, however, turnip greens in all sizes of cans tested and for practically every weight of drained solids gave straight line heating curves.

TRIPLE SUCCOTASH—Heat penetration tests have been made on two experimental lots of this material, which were packed in No. 2 cans in this laboratory and processed in the laboratory retort. In both lots the succotash was composed of tomatoes, lima beans and Shoepeg corn; the difference in the two lots being that one had 10 per cent more tomatoes added than the other. The materials used in both cases were taken from cans.

MIXED VEGETABLES—Heat penetration tests on this product packed in Nos. 1, 2 and 10 cans were made. In the particular mixture tested 12 vegetables were used, of which four were canned and the other eight were added raw.

CORNED BEEF HASH—Determinations of the rate of heat penetration in one-half and one-pound cans of corned beef hash, in quarter and half-pound cans of potted meat and in quarter-pound cans of sardines, have also been made. These runs were made in connection with inoculated packs, which are discussed in Dr. Cameron's report.

BACTERIOLOGICAL STUDIES. By E. J. Cameron.

FACTORY CONTROL—Full use was made of the motorized bacteriological laboratory during the second year of its operation. In 1929, however, it was used not only as a laboratory in which to conduct routine control tests of the type done in 1928, but it was also utilized to advantage in conducting special investigations on products other than corn and peas. The latter work is to be added to and used as a basis for field control in an extended list of products.

Control examinations during the pea pack were conducted in the Tri-States section and in Northern New York. During the corn pack control work was limited to the Eastern Shore of Maryland and Delaware. At the same time three special investigations were conducted, which will be referred to later in this report.

As in 1928, control examinations included tests on the product as canned, and on samples from various "key" points in the cannery. Sugar was tested wherever it was used. In all cases emphasis was placed on a search for the three classes of thermophilic spoilage bacteria (flat sour bacteria, thermophilic anaerobes and sulfide spoilage bacteria), and for the putrefactive anaerobes. In most cases two sets of samples were taken from each factory. Reports were submitted to the individual canneries as soon as possible after the work was done.

During the pea pack tests were made on the products of 65 canneries, representing 41 canning organizations. In 48 canneries spoilage was classed as low, in 13 canneries as moderate, and in 4 canneries as high. The high contamination was due in one case to blancher infection, supplemented by infection from wooden brine tanks, and in the three remaining cases to blancher infection alone. In all four instances the wash which the peas received after blanching was inadequate. Forty-eight (74 per cent of all factories) had one or more blanchers infected by flat

sour bacteria. The degree of infection varied considerably. This incidence of blancher infection confirms observations made in 1928, when blancher infection was found in 65 per cent of the factories in which tests were mde. As a means of blancher control we have suggested a thorough cooling and cleaning of the blanchers after the day's work is done, followed by complete flushing in the morning. Above all, a thorough wash following the blancher is regarded as an important element in control of infection.

Forty-eight canneries used wooden tanks for brine-making purposes. In two factories wooden brine tanks were found to be infected.

In the corn pack routine tests were made on 12 corn canneries. Seven of these packed cream style, and five whole-grain corn. In the whole-grain canneries large numbers of tests were made for putrefactive anaerobes, since past experience has shown that where whole-grain corn is packed without washing there is a possibility of these organisms becoming established in the pores of wooden conveyors and fan mills. Where such a condition exists there is danger of spoilage. Such infection was not found, however, in any of the five whole-grain canneries studied.

Of the seven canneries in which cream style corn was packed, two were found to harbor moderate flat sour contamination. In one the filling system was at fault, and in the other the source was not definitely traced.

This represents a somewhat lower incidence of infection in corn canneries than was observed in 1928, but in 1929 a much smaller number of corn factories was tested. In the territory covered this year, however, most of the corn was prepared by mixing in the cold, and the only pre-cook was in the filler cooker. With such a system the general experience is that thermophilic spoilage bacteria will be found to a less extent than where preheating complications are present.

BACTERIA CONDITION OF SUGAR—Samples of sugar from 59 canneries were tested for the thermophilic spoilage bacteria. Eight refining companies were represented. Where it was found that the sugar was contaminated to such an extent as to be undesirable the cannery was so informed. As regards the condition of the sugar generally, no material change is noted from results of previous years. About 50 per cent of the samples from one refining company were considered unsuitable for canning non-acid vegetables. Another refining company produced sugar of low but variable infection. None of the refiners could be considered as producing clean sugar.

FIELD WORK INCIDENTAL TO ROUTINE EXAMINATION OF SAMPLES

GENERAL—While in New York several canners submitted to the field laboratory samples which would ordinarily have gone to the Washington Laboratory for bacteriological examination. By so doing much time was saved for the canner, and the laboratory staff was helped in its handling of these cases by being close to the cannery in which trouble was encountered. It is felt that this practice should be encouraged in sections where the field laboratory will operate in the future.

SPOILAGE IN SPINACH—Prior to the opening of the pea pack in New York State work was done to find the causes of flat sour spoilage which had occurred in a spinach factory in 1928. The blancher was found to be badly infected with flat sour organisms, and in view of the absence of any other obvious source of infection, it was considered likely that this equipment was responsible for the spoilage experienced. When spinach is blanched in an infected blancher it inevitably carries a material infection to the can, because it is not possible to apply an adequate wash to the spinach after blanching. In this case also blanching was done in a revolving pea blancher. This sort of equipment is not considered to be well adapted to blanching spinach, because of inherent cleaning difficulties.

TOTAL STERILITY IN CANNED CORN—It is well-known that not all canned corn is sterile. It may contain spores of very resistant obligate thermophiles which will not develop at the usual temperature storage. Recently work has been begun to find the basic cause of non-sterility, and if possible to determine the factors which must be adjusted in order that total sterility may be attained.

Basteriological tests have indicated that factors leading to non-sterility in canned corn are:

1. Sugar.
2. Brine equipment.
3. Cooking equipment.

In order to approach the problem from another angle and to test the validity of these bacteriological results, a series of experimental packs were put up which were so planned as to throw some light on the subject.

Packs were put up in three canneries. The processes used were: 45, 60 and 70 minutes at 250°F. In each cannery two lots were put up and given the processes indicated. One of these lots was put up in the usual way; that is, the corn and brine were mixed and heated and canned without any modification in procedure. In the other lot, corn, as it came from the silker, was mixed with brine which had been sterilized. The whole mixture was heated in galvanized iron cans and the corn was filled into the cans by hand. There was no exposure to the cooking or filling systems.

The results of those three packs were as follows:

		Per Cent Spoilage at Processes Indicated		
		45-250	60-250	70-250
Pack No. 1	(a) Corn canned in usual way	100	9.1	0
	(b) Corn with sterile brine — mixed by hand	8.5	0	0
Pack No. 2	(a) Corn canned in usual way	100	97.9	2.1
	(b) Corn with sterile brine — mixed by hand	2.1	0	0
Pack No. 3	(a) Corn canned in usual way	95.0	12.5	0
	(b) Corn with sterile brine — mixed by hand	6.8	0	0

It will be seen that in all three cases where the corn was mixed by hand total sterility was obtained between 45 and 60 minutes at 250°F., and in this connection it is to be borne in mind that incubation was at 130°F., and this is the strictest incubation test for canned corn. For the corn canned by hand (sterile brine), a small percentage of spoilage occurred after the 45 minute cook. With the corn canned in the usual way there was 100 per cent spoilage in two of the packs and 95 per cent in the third after 45 minutes. In general the results strongly confirm ideas gained through bacteriological tests, that the brine and cooking equipment contribute much to significant thermophilic contamination.

The data which is reviewed here is not to be taken to denote that this laboratory is considering a downward revision of recommendation for can processes at the present time. The recommended process of 70 minutes at 250°F. is still regarded as necessary to give a margin of safety against spoilage. The data reported above were the result of laboratory experiments conducted in can factories and contain no immediate significance as regards factory practice.

CONTROL OF THERMOPHILIC CONTAMINATION—A dye named gentian violet has been found to be of use in medicine as a means of restraining or inhibiting the development of certain classes of bacteria. It has been found in this laboratory that the dye will restrain the growth of flat sour bacteria when present in extremely small amounts. A concentration of one to one million is usually sufficient for this purpose. The dye is harmless and of light color when diluted to the point desired. Unfortunately, it has no killing effect on the bacteria, but only a restraining effect on growth.

Experiments were conducted to determine whether this substance could be used to advantage by pea and corn canners. The experiments were conducted for the most part in blanchers. The dye was mixed in the desired concentration in the blancher and held over night. In the morning this equipment was thoroughly flushed out before starting work for the day.

All results were to the effect that over-night development of thermophilic bacteria can be restrained through use of the dye, but there is a question as to whether this is more efficient than thorough cooling of the blancher at night followed by flushing in the morning.

Experiments in this line will be continued in a general program of attempting to find positive methods of control of thermophilic bacteria in canning factories.

TOMATO STORAGE EXPERIMENTS—It has been attempted to find whether it would be practicable to store tomatoes in chlorinated water to carry over in a glut for the manufacture of pulp. With this in mind, several lots of tomatoes yere held in chlorinated water for various lengths of time. Then they were pulped and shipped to the laboratory for final tests. These tests are not complete, and final statement cannot be made at this time. At present the results seem somewhat disappointing. The chlorine will restrain spread of contamination by keeping down bacterial growth in the water in which tomatoes are held, but where there is infection within the tomatoes the chlorine is ineffective because of the organic matter of tomatoes. Also within two or three days the tomatoes become very soggy and unquestionably there is material loss through disintegration.

SARDINE EXPERIMENTAL PACK—An experimental pack of sardines was put up with the idea of determining the effect of oil in processing. The analysis of the data in this connection has not been completed, and no deductions can be stated at this time.

PROGRESS

CONTINENTAL'S SILVER ANNIVERSARY

Twenty-five years ago, the Continental Can Company was organized by a small group of men experienced in making cans, who believed that the industry was sound and would grow.

Their first step was to acquire the facilities and patents of the United Machine Company, who had developed a line of improved can-making machinery. With these facilities, the Company manufactured enough can-making machinery to equip two plants.

Their next step was to acquire two plants for the manufacture of cans—one in Syracuse, New York, a former glass factory, and the other in Chicago, Illinois, originally built as a foundry.

The first shipment of cans made by the Company was made from the Syracuse plant in April, 1905.

Today, Continental has 35 modern plants located at convenient points in 24 cities of the United States and Cuba, including four plants for the manufacture of can-making and can-closing machinery, and completely equipped laboratories for research in canning and can manufacturing.

To provide adequate service, it has built up an experienced organization of 11,000 employees. Its stockholders number in excess of 15,000 and its yearly output reaches into billions of cans.

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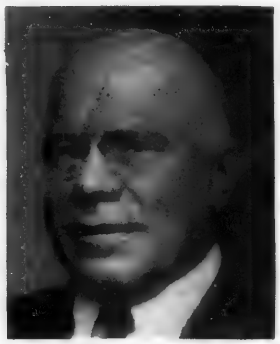

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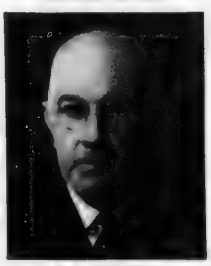

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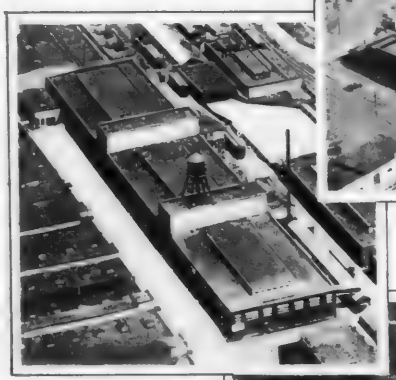
CHICAGO NO. 2

KANSAS CITY

SAN JOSE

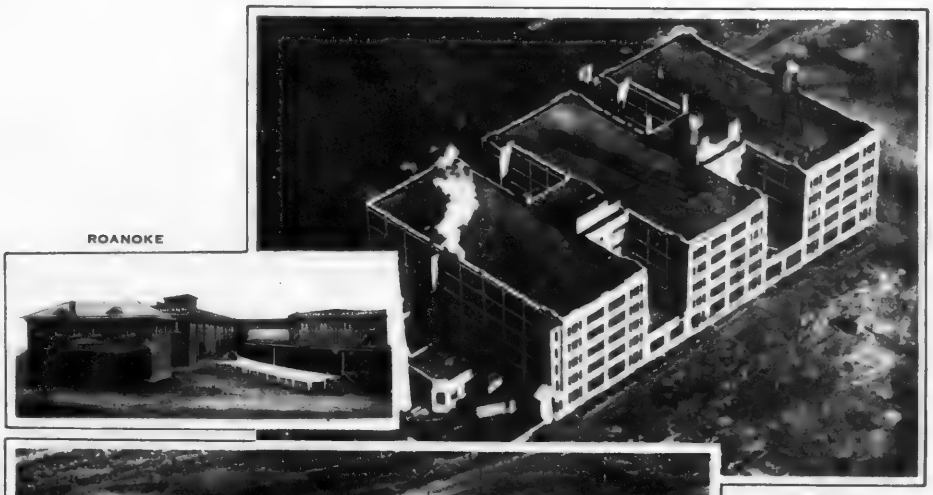
SEATTLE



EAST ST. LOUIS

CLEARING

CONTINENTAL'S PLANTS



ROANOKE

JERSEY CITY

LOS ANGELES

HURLOCK

CUBA

OAKLAND

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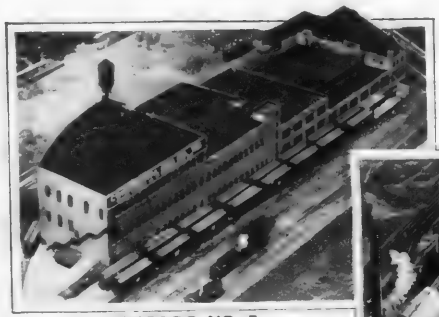
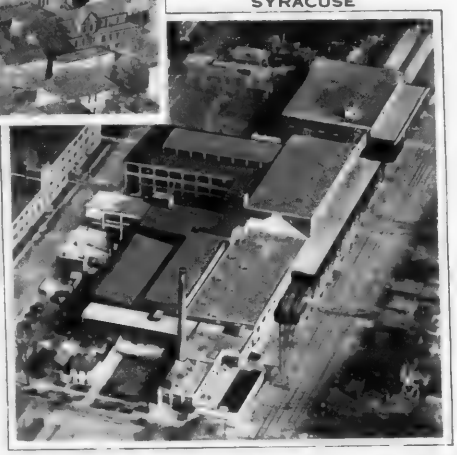


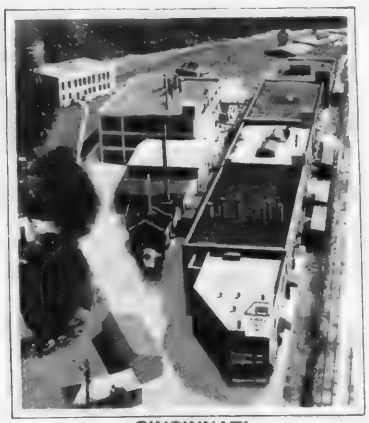
CHICAGO NO. 5

PASSAIC

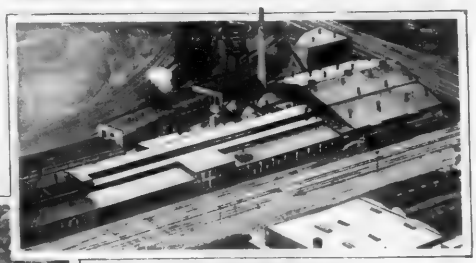
WHEELING NO. 2

SYRACUSE





CINCINNATI



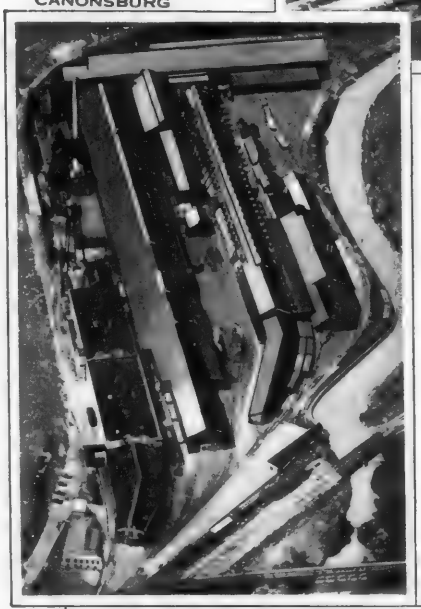
CHICAGO NO. 1

WHEELING NO. 1

CONTINENTAL'S PLANTS

BALTIMORE NO. 1

CANONSBURG



NEW ORLEANS

CHICAGO NO. 9

BALTIMORE NO. 2

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Continental's Research Laboratories have, for many years, made important contributions to the progress of the canning industry and, in addition, have long given support to the splendid research work as conducted by the Canners and in the Laboratories of the National Canners Association.

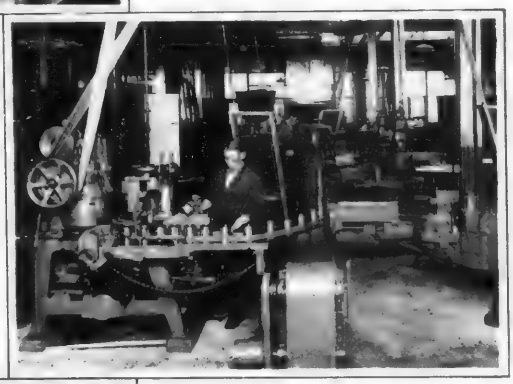
Continental Research Laboratories have a large staff of technically-trained specialists and are equipped with the most modern facilities to serve its customers in matters of canning technology and related subjects.

In addition, staff service is available to assist its customers in any of their canning problems requiring immediate solution. Continental's Laboratories also test and check the quality and suitability of the many materials that go into its products.

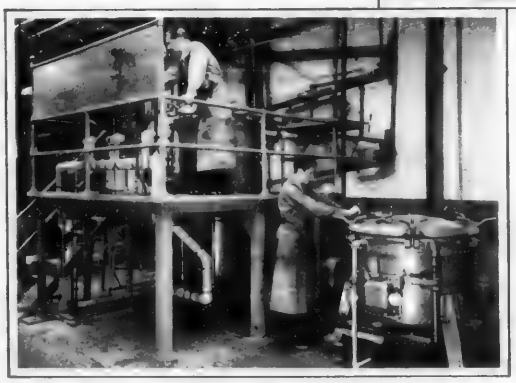
CONTINENTAL'S
RESEARCH DIVISION

A view of one of the Analytical Laboratories.

One end of the Bacteriological Laboratory.



A section of the canning room.



One side of the experimental canning section.

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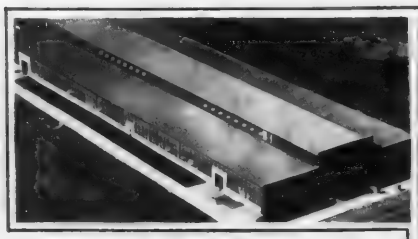
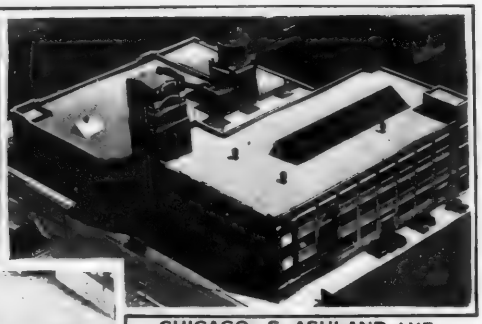


CHICAGO—McDONALD



CHICAGO—S. ASHLAND AVE.

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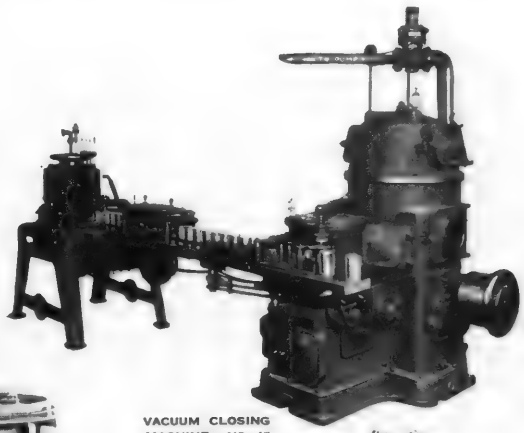
SYRACUSE

Practically all of the can-making and can-closing machinery required by Continental is made in the four modern plants pictured above.

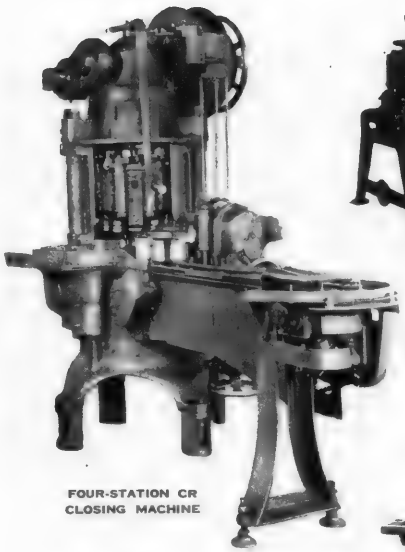
During the past twenty-five years, Continental's engineers have created and perfected many types of closing machines for practically every canning need. These machines are constructed of the finest materials obtainable and under the most exacting standards of precision—all to the end of rendering the utmost in service with a minimum of adjustment.

Continental's High Speed Vacuum Closing Machines with a minimum number of parts, and built to provide ample time for drawing a vacuum. are models of excellence in design, workmanship, and service.

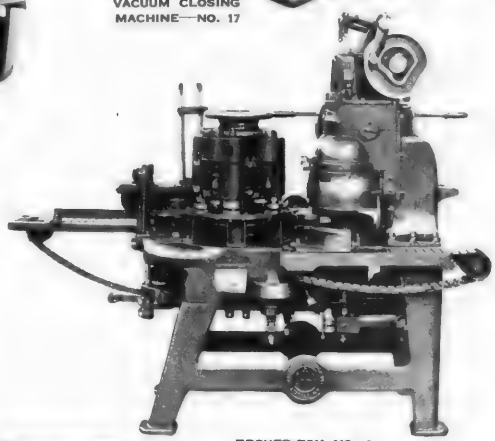
CONTINENTAL'S
MACHINERY DIVISION



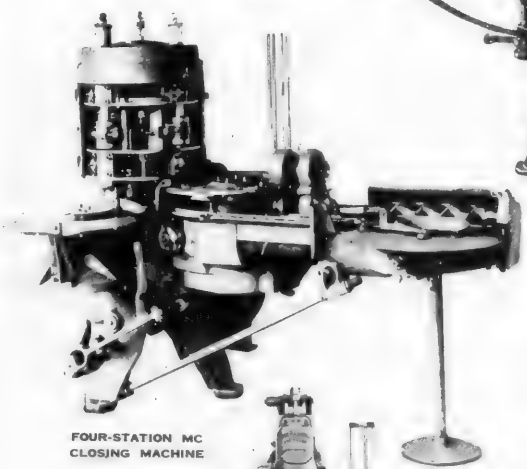
VACUUM CLOSING
MACHINE—NO. 17



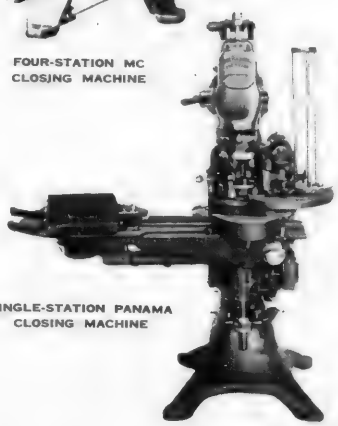
FOUR-STATION CR
CLOSING MACHINE



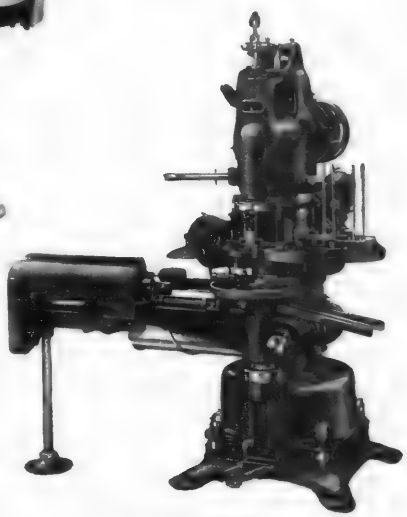
TROYER-FOX NO. 9
CLOSING MACHINE



FOUR-STATION MC
CLOSING MACHINE



SINGLE-STATION PANAMA
CLOSING MACHINE



SINGLE-STATION PANAMA
NO. 10 CLOSING MACHINE

CONTINENTAL'S
GENERAL LINE DIVISION

Early in Continental's history, the General Line Can Manufacturing Division was started at Chicago.

Today, 14 of Continental's plants are devoted to the manufacture of cans of this type suitable for the packaging of coffee, lard, spices, paint, shoe polish, toilet preparations, oils, drugs and many other miscellaneous products.

CONTINENTAL'S
GENERAL LINE DIVISION

A. V. CRARY
MANAGER OF SALES
GENERAL LINE

L. J. LA CAVA
ASSISTANT MANAGER OF SALES—
GENERAL LINE

In these days of keen merchandising, the tremendous growth in the demand for packages that stimulate sales has contributed to the development of this Division of Continental.

Continental now manufactures cans for practically every packaging need — from small sample cans to 110# lard drums, lithographed in any number of colors, and in a variety of sizes, shapes and styles.

Its efforts have been steadily directed toward improvement, both as to lithography and utility features of its products.

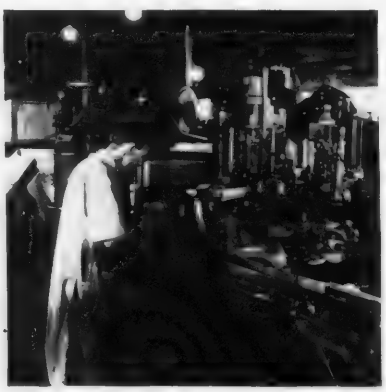
Continental General Line cans are identified with many of the country's outstanding merchandising successes.

EMPLOYEE-PARTNERS IN THE BUSINESS

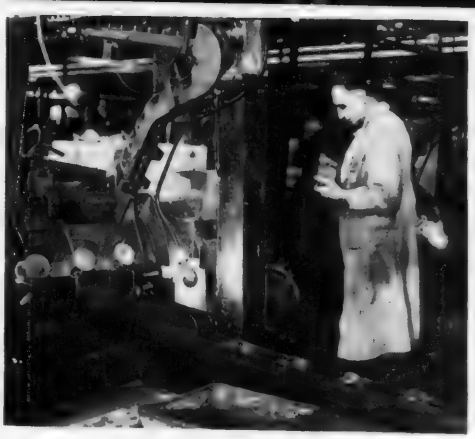
More than 5000 employees of Continental, from the office boys to the president, are partners in the business—voluntary stockholders because they believe in Continental.

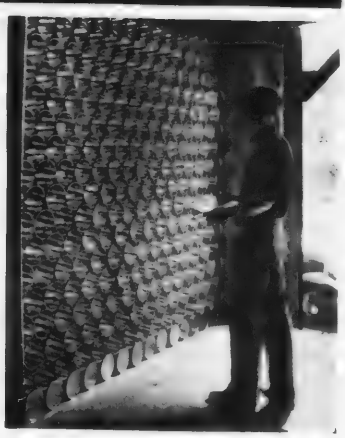
As partners, they have a deeper interest and pride in the Company's success; they have the will and experience to produce the utmost in quality products and render unusual service.

Whether the request be for service—a matter of credit, traffic, research, an order for cans, or what else, it will receive prompt attention by one of the Partners. From the Atlantic to the Pacific, "The Continental Idea" of Quality and Service guides the whole organization.



EMPLOYEE-PARTNERS IN THE BUSINESS



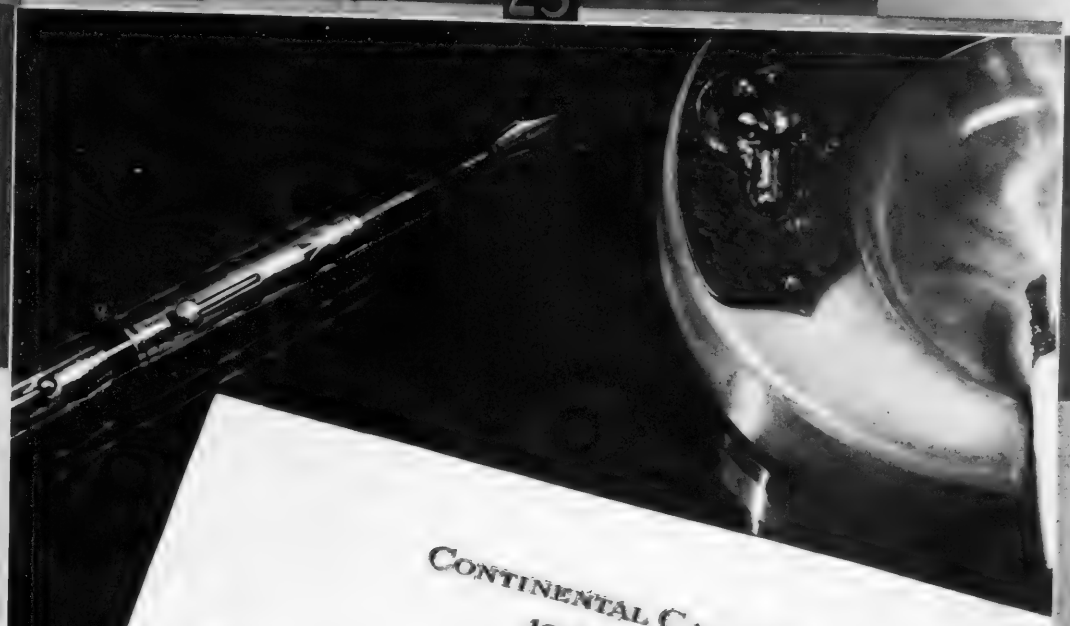


During the last quarter of a century, tremendous strides were made in the canning industry, as in all other industries, resulting in improved products and processes. Without doubt, further progress will be made in the next twenty-five years, resulting in further advancement.

Continental, in conjunction with the Canners, is constantly studying the science of preserving foods and other products to the end of improving its manufacturing processes and assisting in solving the problems of the industry.

Whatever the developments of the next twenty-five years bring forth, Continental, with its resources and its large and experienced organization, can be counted upon to contribute its full share toward the upbuilding of the industry.

DUE TO LACK OF SPACE, IT IS IMPOSSIBLE TO INCLUDE THE PHOTOGRAPHS OF HUNDREDS OF OTHER CONTINENTAL MEN WHOSE CAPABLE AND LOYAL SERVICE TO COMPANY AND CUSTOMERS HAVE BEEN SO IMPORTANT A FACTOR IN CONTINENTAL'S UPBUILDING



CONTINENTAL CAN COMPANY, INC.
100 EAST 42ND STREET
NEW YORK, N.Y.

OFFICE OF THE PRESIDENT

January 1, 1929

TO THE CONTINENTAL ORGANIZATION EVERYWHERE

With bright prospects before us for the future it is fitting to restate the

"CONTINENTAL IDEA"

To be loyal to the Company and to each other.

To maintain the highest standard of QUALITY and SERVICE.

To serve our customers wherever located, at all times, with suitable containers.

To be so fair that we will always merit friendly relationship and continued patronage.

To develop packages and processes valuable to our customers.

To treat those from whom we purchase commodities with such fairness that they consider it a pleasure to serve us.

In short to build a greater "CONTINENTAL" on the sound principles of its past traditions. Let our every day business dealings be guided by this code.

Yours very truly,

C. C. Conway

President

CCC:F

CANNED MEAT INVESTIGATIONS—Experimental packs of corned beef hash and potted meat have been put up to determine what constitutes adequate processes for these products. These packs are now under incubation.

The actual work of putting up the packs was preceded by a time-consuming laboratory program through which a desirable test organism was obtained. About 20 cultures of putrefactive anaerobes of the type which might be found in meat products were tested to determine whether spores could be developed readily and whether such spores were of desirable resistance. A suitable organism was found and a spore suspension was obtained, and this was used for inoculation purposes.

SPRINGER-PERFORATION STUDIES. By E. F. Kohman.

It would be gratifying (a goal toward which we are working) to be able to give the fruit canner a definite measure to take, and to assure him of a definite and specific effect in lowering his losses from springers and perforations. Our data from both laboratories on the effect of storage temperature and headspace are of this category. The data on these two factors, however, is merely specific evidence on two fundamental principles which have previously been known and recognized, although we do not wish to minimize their significance by this statement. The difficulty in evolving an entirely new principle can only be realized with a full understanding of the nature of the problem. Without appearing too much in the light of presenting an alibi for what might seem slow progress in finding palliative measures for fruits which cause undue losses through the formation of hydrogen springers and swells and of perforations, it seems appropriate to point out the complicated nature of our problem.

CORROSION STUDIES—The corrosion which occurs in a can of fruit is probably as complicated as is ever encountered. It involves two metals of varying purity exposed to a very complex corrosion medium, many components of which are unknown. One step in the solution of any corrosion problem is an attempt to substitute a less corrodible metal. In this connection we have made a study of stainless steels and found them highly commendable as far as resistance to corrosion is concerned, but impractical from an economical standpoint. Another step is to change the nature of the corroding medium. We could probably make a number of suggestions along this line that would be very effective, but possibilities along this line are restricted by the fact that we are dealing with foods. Because of an apparently unsurmountable handicap in this complicated problem, we decided that a comprehensive study of the nature of the corrosion in canned fruits would be enlightening. The results of such studies have been gratifying, as they have led to many interesting facts which have harmonized heretofore apparently contradictory facts.

Two fundamental facts disclosed were briefly discussed in last year's report. These are that in canned fruits, tin is a less noble metal than iron, which is contrary to what had been believed, and that the relative nobility of these metals may be so affected by acidity that higher acidities may actually lessen the corrosion. This is also contrary to common belief. According to the ideas available heretofore, plain cans should perforate more than enameled cans. The facts that we now have offer a plausible explanation of the actual results in the two types of cans. The fact that acidity has an effect contrary to what it has in most corrosion problems, suggests a measure for favorably changing the corrosion medium. Dehydrated prunes are frequently stewed with the addition of sliced lemon, the acid of which should be beneficial from the standpoint of corrosion.

To determine the effect of flavor from the addition of acid to black sweet (Bing) cherries, a series of lots of these cherries were canned on July 11, 1929, with the addition of varying amounts of citric acid as follows:

Lot BC—Control, without added acid.
Lot BC-1—Citric acid equivalent to 0.25 per cent of the cherries.
Lot BC-2—Citric acid equivalent to 0.5 per cent of the cherries.
Lot BC-3—Citric acid equivalent to 1.0 per cent of the cherries.
Lot BC-4—Citric acid equivalent to 1.5 per cent of the cherries.

A number of individuals have been asked, on different occasions, to taste these various lots of cherries, not knowing in what manner they differed. Everyone picked one of those lots containing added citric acid, but there was a difference in preferences as to the amount of citric acid. Probably 0.5 per cent would be the one most commonly chosen. The added acid also gave the cherries a slightly brighter color, but the smallest amount of acid was as effective as the larger amounts in this respect. While it is too early to draw conclusions from the losses in this small pack, two per cent of the control lot, with no added citric acid, had perforated on December 10th, while the others were all normal.

Blueberries are commonly canned in plain (unenameled) cans. Their brilliant color in a plain can changes to a bluish lavender. In an enameled can this is avoided, but perforations are so prone to form as to make packing in enameled cans non-commercial. The addition of citric acid or another acid to make possible the packing of blueberries in enameled cans would be a marked improvement in canned blueberries from the standpoint of color. Experimental packs of blueberries with added citric acid would, therefore, be of interest.

The definite effect of varying acidity in different fruits will require considerably more study to which we are giving our immediate attention.

WEIGHT OF TIN COATING—Both in 1926 and 1927 we made comprehensive experimental packs with the following six lots of cans:

1. Coke bodies and coke ends.
2. Coke bodies and charcoal A ends.
3. Coke bodies and charcoal AAA ends.
4. Charcoal A bodies and charcoal A ends.
5. Charcoal A bodies and charcoal AAA ends.
6. Charcoal AAA bodies and charcoal AAA ends.

Since perforations were heretofore reported as occurring very largely in the end of the can, it was suggested that possibly heavier coated ends would have practically as beneficial an effect as the use of a heavier coat of tin over the entire can. Subsequent to making these packs, however, a closer examination of numerous cans has disclosed the fact that although perforations, from an outside examination of the can, apparently occur first in the end of the can, the body of many cans tends to perforate first but the perforation is hidden in the seam. Furthermore, general corrosion is more common on the body than on the end, but this also is hidden in the seam. In harmony with these new findings, the results of the above experimental facts do not suggest that the use of heavier coated ends on coke bodies would be justified.

EXPERIMENTS WITH ALUMINUM—Two years ago we attempted to make aluminum cans, but at once realized that aluminum is not rigid enough for the bodies. In last year's report, we stated that we had packed fruits in cans in which the ends were of aluminum, and that a great deal of difficulty was experienced in getting these aluminum ends to hold in a seam because of the softness of the metal. In cans with aluminum ends which apparently were unable to hold the vacuum, there was marked corrosion on the body of the can which was tin plate, but the aluminum ends showed no evidence of corrosion whatsoever, the enameled coating appearing to be perfect throughout. In cans which still had a vacuum, showing that they did not leak air, there was no corrosion apparent either on the body or ends of the can. It seems that enameled aluminum sheet is threfore a suitable material as far as resistance to corrosion in canned fruit is concerned, but that it is too soft to hold a tight seam. Some alloys of aluminum are more rigid, but whether these will resist corrosion to the same extent must be left to actual test. We have this line of work in mind for the future.

CORROSION FROM DEHYDRATED FRUITS—In August, 1928, we had a pack of fresh and dehydrated prunes made in enameled cans. Within a year the dehydrated prunes had all perforated, whereas the fresh prunes were still in a normal condition. The acidity of dehydrated prunes is appreciably lower than that of fresh prunes, which in part explains the difference in the results cited. Dehydration apparently affects the prune pits in such a way that certain constituents of the kernel of the pit diffuse out into the prunes more than is the case in fresh prunes. We have previously shown that crushed cherry pits have a pronounced effect in accelerating corrosion. This diffusion through the stone of the dehydrated prune pit is probably another factor in causing them to corrode the can more severely.

On April 5, 1929, we packed dehydrated and fresh Stayman winesap apples (unpeeled), in enameled cans. By December 10th, 65.2 per cent of the dehydrated apples were perforated, whereas of the fresh apples only 12.8 per cent were perforated. Although we have no conclusive evidence, we believe that the absorption of oxygen during the dehydration process is a factor in causing dehydrated fruits to corrode the can more severely.

Apple butter manufacturers have found this to be a product which frequently results in a great deal of trouble. Dehydrated apples are frequently used in the manufacture of apple butter. The above results suggest the desirability of some study in this connection.

THE SHIPPING OF CANNED FRUIT—An undue proportion of springers and perforations is often noticed in canned fruits shortly after shipping. To determine the effect of agitation,

apples were packed on March 1st, 1929, both in water and 40 per cent syrup and divided into two lots, one of which was placed in a rack which could be rotated easily. This lot was rotated daily for six days in the week, so that each can was rotated endwise twelve times daily. On December 10th, nine per cent of the stationary cans were perforated, whereas only three per cent of the rotated cans were perforated, indicating that agitation does not increase corrosion but that shipping merely makes manifest corrosion that had already taken place.

EFFECT OF SYRUP—The relative rate of perforations in the syrup and water packed apples in the experiment just described is of interest. Of the nine per cent of the stationary cans which perforated, six per cent were from the syrup pack and three per cent from the water pack. Of the rotated cans which had perforated, two per cent were from the syrup pack and one per cent from the water pack. These results check our previous findings that syrup-packed fruit results in earlier losses. The experiments with the six lots of cans mentioned above under Weight of Tin Coating comprised both syrup packed and water packed fruit, and in every instance, the syrup packed fruit resulted in earlier losses, although this earlier loss was moderate rather than marked. It may be said that a similar exhaust in a syrup pack has less effect in raising the temperature and, therefore, in creating a vacuum in the closed cans, than it would have in a water pack. Such a tendency would cause earlier hydrogen springers and swells. However, fruits such as Bing cherries and the apples mentioned above, resulted in perforations without the formation of springers. Moreover, in those fruits which result in both springers and perforations, the perforations were always more pronounced with the syrup-packed than with the water-packed goods.

VITAMIN STUDIES. By E. F. Kohman.

PEARS—In the September issue of Industrial and Engineering Chemistry, there was published our work on Kieffer pears and Bartlett pears, conducted cooperatively with Teachers College Columbia University, New York, and the State Agricultural Experiment Station, Manhattan, Kas. The packing of these pears was outlined in last year's report. The results may briefly be summarized as follows:

Kieffer pears, if canned at the time of harvesting when they are still hard and green, experience no appreciable loss in vitamin C if suitable means are used to eliminate oxygen. If the Kieffer pears are allowed to ripen and are canned in the usual commercial way, from one-quarter to one-third of the vitamin C is lost.

Bartlett pears, similarly canned in the usual commercial way, are about equivalent to Kieffer pears in vitamin C content.

This is in sharp contrast with results reported earlier from the Kansas State Agricultural College to the effect that whole canned Kieffer pears lose practically all their vitamin C content in home canning processes.

Pears are relatively low in vitamins A and B, and there is no evidence that canning appreciably effects these vitamins.

PINEAPPLES—During the year a comprehensive study of commercially canned pineapple from the Hawaiian Islands, and of raw and home canned pineapple from Porto Rico, has been under way. The results so far obtained may be summarized briefly as follows:

Pineapples have a fair portion of each of the vitamins A, B and C. In A they are less potent than tomatoes, but more potent than oranges and strawberries. In vitamin B, pineapples are somewhat richer than tomatoes, peaches and milk. In vitamin C, they rank with peaches, are richer than pears and apples, but less potent than tomatoes, oranges or strawberries.

Before a final report is issued, additional work seems desirable.

GREEN AND ARTIFICIALLY RIPENED TOMATOES—Numerous inquiries as to the relative vitamin content of artificially ripened tomatoes and vine-ripened tomatoes prompted an experiment to throw light on this subject. Some experiments reported from England indicated that in canning tomatoes, three-fourths of the vitamin C was lost. Several independent experimenters in this country have concluded that commercially canned tomatoes contain practically the same amount of vitamin C as raw tomatoes. Tomatoes in England are grown under vastly different conditions than the tomatoes used for canning in this country. In order to determine whether the canning of tomatoes might result in different effects on vitamin C when differently treated tomatoes are used, we canned green tomatoes and also similar tomatoes after artificially ripening them for our feeding experiments. Ethylene ripened tomatoes were not used because several other workers have already reported that green picked tomatoes have the same vitamin content after ripening spontaneously as when treated with ethylene gas. Our experiments indicate the following conclusions:

The comparison of raw green and raw artificially ripened tomatoes shows a material difference in their content of vitamins A and C—the artificially ripened tomatoes being approximately 50 per cent higher in vitamin A and 40 per cent higher in vitamin C content. There was no difference noted in vitamin B between the green and ripened tomatoes.

Although artificially ripened tomatoes are comparable in vitamins A and B content to vine ripened tomatoes, they are approximately only three-fifths as rich in vitamin C.

There was no difference noted in the vitamin A, B and C content of raw green and canned green tomatoes.

Artificially ripened tomatoes raw and canned, also showed no difference in vitamins A, B and C content.

The high loss of vitamin C noted by English workers in canning is apparently to be ascribed to factors not operating in the canning of tomatoes in this country, since we have experienced no loss of vitamin C in canning green, artificially ripened or vine ripened tomatoes.

It is of interest to note that field ripened tomatoes raw or canned are superior in vitamin C content to tomatoes picked green and artificially ripened.

VACUUM PACKED PEAS AND GREEN BEANS—A study was made of peas and green beans packed by the vacuum waterless method in comparison with peas and green beans of the same lot packed by the usual method with brine. The results indicate that there is no difference in the effect on the vitamins between these two methods of canning. At the same time, peas were canned without a blanch and also with the addition of one-quarter per cent sodium bicarbonate (baking soda), to the brine. The blanching of the peas resulted in a loss of about one-third of vitamins B and C. The addition of sodium bicarbonate had a slight effect in reducing the amount of vitamins B and C, but its effect was not marked as that of the blanch.

It may be recalled that in our previous work on peas, about one-quarter to one-third of vitamins B and C were lost by blanching No. 3 peas for a period of seven minutes. In the present study, the peas were blanched for a period of six minutes. It is highly probable that the major portion of this loss is caused by a leaching out process of the blanch water. This same leaching effect would be manifested in the case of soluble mineral salts and any other soluble nutrients. These results should receive serious consideration with the viewpoint of cutting down the blanch on peas to a minimum. There is no doubt that many peas are over-blanched from the standpoint of securing the best product. If peas are handled promptly after vining, a very short blanch is all that is necessary.

The usefulness of the results of our vitamin studies, as well as the sustained interest in them, is much in evidence. It is not unusual for popular writers, particularly in the newspapers and semi-scientific publications, to make statements that are diametrically contrary to the results of our vitamin studies. The reaction of the writers of such statements when our data is submitted to them in a logical manner, is in the great majority of cases, very gratifying. Since our work has been centered on the fundamental principles involved, it is far more convincing than mere analytical data would be. This aspect of the work makes the results of particular interest to scientifically trained minds; as the result of which, schools and colleges of home economics show a great interest.

SPECIAL INVESTIGATIONS

THE EFFECT OF HOLDING VINED PEAS IN COLD STORAGE. By H. R. Smith.

Every canner of peas knows that when shelled peas are held at ordinary temperatures, loss of quality results. The higher the temperature and the longer the time of holding, the greater is the loss in quality as shown by a toughening of the skins and a loss of flavor and finally the development of a distinctly abnormal flavor.

Previous experiments by the National Canners Association have shown that even two hours storage at summer temperature results in perceptible change of quality. Shelled peas held in tubs or other large containers start to heat at the center. Washing with tap water which is 70 degrees F. or above, removes the heat but does not prevent its further development. If the heating is alloyed to continue for even a short time, souring of the peas sets in and the peas have to be thrown away.

Every factory manager tries to get the peas into the cans very soon after they come out of the pods. The whole pea canning system works to that end. But when any of the many pos-

sible conditions arise to delay or interrupt the canning process, some emergency measures to prevent excessive loss in quality may profitably be used.

Since the temperature of the air in which shelled peas are held affects both the rapidity and the degree of spoilage, a series of experiments was carried out to show more definitely this influence of temperature and to indicate the possibility of holding shelled peas in cold storage to prevent the loss due to heating.

Two methods of handling the shelled peas were investigated. The first was to hold the shelled peas, direct from the viner, in small units in a cold storage room. The second method was to chill the shelled peas by immersing in cooled water, then storing in a cold storage room. Different types of boxes or containers for holding the peas in storage were also investigated.

A preliminary experiment showed:

(1) Peas from the viner placed in lug boxes would not cool fast enough in a 29 degree F. cold storage room to prevent heating and loss of flavor. Even a layer only four inches deep in the lug box would start to ferment.

(2) Peas from the viner when placed in a four inch layer in a box having a metal perforated bottom did not start to ferment in the 29 degree cold storage room. The necessity for circulation of air through the mass of peas is thus emphasized.

(3) If peas from the viner are chilled by dipping in ice water until the mass of peas, after draining, shows a temperature below 50 degrees F. they may then be placed in large containers in any desired amount and fermentation will not take place in the 29 degree cold storage room.

A series of experiments was carried out to show more of the possibilities of such storage of vined peas. A single lot of early peas (Rogers Winters Variety) and another of late peas (Admiral Variety) were divided into ten units each. Five of each were placed in individual trays 15 inches by 30 inches by 4 inches and having the bottom of perforated zinc plate (similar to that used in pea washers). Each tray was level full of the peas. The other five units of each lot were placed in individual lug boxes after chilling in ice water to below 50 degrees F. The peas in the boxes were about six inches deep. All of these 20 units were placed on two by four planks on the floor of a cold stroage room which was kept at approximately 30 degrees F. throughout the experiment.

All of these peas were ungraded for size and had not been previously washed. A temperature record of the peas in the cold storage room showed that there was no heating of the peas in any of the boxes or trays. The peas in the trays showed a temperature of approximately 40 degrees after 15 hours storage and after 63 hours storage were all at 34 degrees. The initial temperature of these peas was approximately 80 degrees F. One tray or box of each of the four lots being stored was canned at intervals by the regular factory process, preceded by a 12 minute blanch at 200 degrees F. The storage periods were 21½ hours, 70½ hours, 91½ hours, 141½ hours and 167½ hours. When each lot was taken from the storage warehouse to the factory the peas were carefully examined by the factory superintendents for any abnormal characteristics. These men did not notice any definitely objectionable characteristics in the first four lots taken from storage. The final lot which had been stored 167 hours showed perceptible discoloration and drying of the peas.

Examination of the canned peas a month and a half after canning showed a noticeable change in the flavor due to storage. There was also more or less toughening of the skins. There was a gradual increase in the objectionable qualities as the length of storage increased. The last two lots to be canned showed a decidedly objectionable flavor and a definite toughening of the skins. However, most of the lots were of merchantable quality.

A similar experiment was carried on with the Perfection variety of late peas. In this case, instead of ungraded peas, separate lots of No. 2 and No. 4 size from the same lot of vined peas were treated in a manner similar to that outlined above. The same trays and similar lug boxes were used and the same temperature was used in the cold storage room. Individual units from each lot were canned after one day, two day and three day storage.

The factory managers were not able to detect any abnormal characteristics of the peas as received from the cold storage warehouse. These peas were blanched five minutes at 180 degrees, given the usual factory brine and process. Examination of these lots of canned peas approximately five months after canning showed that they were of merchantable quality although storage had noticeably affected both the flavor and the toughness. It was possible to pick out, by taste, those peas which had been stored the longer period of time. The smaller sized peas seemed to have been more seriously affected than the larger size. There was very little, if any, change in the color of the peas or the appearance of the liquor.

In the experiments outlined above, it was noticed that the greatest change in flavor seemed to take place within the first 24 hours of storage. A small experiment to shed further light on this point was conducted with No. 2 Admiral Variety peas which were washed, sieved, chilled in ice water and placed in the cold storage as usual. Samples were taken after 6½ hours storage and after 27½ hours storage. There was very little difference in the characteristics of those which had been stored 6½ hours and those which had been stored 27½ hours.

It is evident, therefore, that the loss of flavor occurring when peas are chilled with water immediately after vining and then stored at a temperature of about 30 degrees, comes chiefly in the first half dozen hours. Afterwards, the loss of flavor in cold storage is very low. The change of flavor occurring in 24 hours at a temperature of about 30 degrees is comparable with the change that occurs in from two to four hours under ordinary canning conditions.

There was no perceptible difference in flavor or other characteristics (of the canned product) between peas stored in lug boxes after chilling in ice water and peas stored in shallow perforated trays without previous chililng. The storage in both cases was at a temperature of 29 degrees F.

These experiments indicate that it is possible to store vined peas for several days in a refrigerator without prohibitive loss in quality. Any storage results in some loss in quality. The extent of the change seems to vary with the different varieties of peas, and, undoubtedly, other features also are involved. It is believed that the information obtained in these experiments will enable those pea canners who are interested, to work out for themselves the further practicable details as applied to their own conditions. We have been gratified to learn that a few canners have already taken steps to apply similar principles in their factories.

THE CONSISTENCY OF CANNED PUMPKIN

By H. R. Smith.

Note.—The discussion on this subject is included in the paper by Mr. Smith, which is given in the Proceedings of the Pumpkin Section.

ETHYLENE TREATMENT OF TOMATOES. By E. F. Kohman.

The ethylene treatment of tomatoes as well as other fruits has been given a great deal of attention in scientific and popular literature. It has been reported by investigators that ethylene tends to ripen the stem end of tomatoes first. Nature tends to ripen the blossom end first. It would be extremely desirable to have tomatoes for canning purposes to ripen uniformly on both ends.

It seemed logical that if ethylene ripens the stem end first and if tomatoes were picked when they are not fully ripened and then treated with ethylene gas, uniformly ripened tomatoes should result. Furthermore, if tomatoes could be picked before they are full ripened, they would stand handling somewhat better, thus resulting in less broken and bruised tomatoes which are sources of bacterial, yeast and mold infections. For this reason, a study was made of the effect of ethylene gas on tomatoes during the tomato canning season in one of our member's canneries. Tomatoes of all degrees of ripeness were sorted from those coming in to the factory, and also picked from the vines in the fields to include tomatoes in which the red color had developed on only about half the surface. To our surprise, ethylene gas had no effect whatsoever on any of these tomatoes. The control lots held outside of the container in which the tomatoes were treated with gas ripened just as well and as rapidly as those inside of the contained. We then picked tomatoes as mature as possible without there being any evidence of their developing any red color. These tomatoes treated with ethylene gas, all turned red, whereas in the case of the control lot outside the container, only about half of the tomatoes turned red.

Further investigation showed that if quite green tomatoes were picked, these would be started to turn red by ethylene, but would not turn red as readily without ethylene. We take this to mean that if tomatoes are picked as green that they are not yet ready to turn red of their own accord, ethylene will cause them to redden, but if once the tomatoes are ready to turn red they will do so of their own accord as well as with ethylene. Tomatoes picked at such an immature stage of development, are decidedly inferior to vine ripened tomatoes, and hence, ethylene has no place with tomatoes for canning purposes. If a substance should be found to cause the stem end to ripen with the blossom end, its use would afford obvious advantages.

COLD PACK (Freezing). By E. F. Kohman.

Time did not permit our doing as much work on the freezing of fresh fruits as popular interest would suggest. We have, however, followed certain fundamental principles involved. Freezing, just as cooking, has a definite effect on physical structure. With some products the effect of freezing is far more severe in breaking down physical structure and even on flavor than the heat necessary for sterilization in canning. The rate of freezing of fruits does not involve the same principles as is the case with fish and meats. The rate of freezing may be an important matter with some products, but with others it seems to be of no consequence. Tomatoes, whether frozen slowly in a refrigerator, in a cold brine and ice mixture, or even in liquid air, completely break down and their color and flavor are more adversely affected than by canning. We expect to follow up the chemical and physical reactions involved in the freezing of various products.

SERVICE. By H. R. Smith and C. A. Greenleaf.

The amount of service rendered our members by the laboratory is only partially measured by the samples submitted by them. It includes, among other things, problems submitted by them which require study of the literature or of data which has been accumulated by the laboratory, and in some cases, a material amount of laboratory work. Data have not been compiled regarding such inquiries. During the year the laboratory has examined 472 samples submitted by its members. In many instances, a single sample included a case or more of cans, or a number of items requiring separate examination. Some samples were of such nature that they could be examined in a few minutes—others involved an investigation requiring considerable time. The samples received may be roughly classified as follows:

Chemical Studies	21
Sterility Tests	44
Cause of Spoilage	54
Discoloration	13
Off-flavor	13
Tomato Products	43
Consumer Complaint Cases	100
Miscellaneous	184

The item marked "Chemical Studies" does not include samples involving a simple chemical analysis by established methods. It includes only those samples to which it was necessary to apply unusual methods of examination, in many cases involving considerable study. In several cases the examination of samples for determining the cause of spoilage was followed by a visit to the factories in which they were canned, to ascertain the conditions that caused the spoilage.

Most canners have learned the necessity of avoiding the use of copper as much as possible in connection with pipes and receptacles for handling canned corn. Several samples of cream style corn were submitted during the year, however, which were discolored by very small amounts of copper.

One sample of canned herring was colored pink by a chromogenic bacteria from the salt used in its preparation.

Samples of canned peas, sliced apples, and apple sauce had a pronounced odor and taste resembling kerosene. One sample of peaches had a musty or woody odor, due to the boxes used as containers in storing the raw product.

Among the miscellaneous samples included in the tabulation, shavings from the inside of brine tanks from 13 factories were examined to determine whether the tanks were contaminated by spoilage bacteria. Pressure gauges and thermometers from five factories were calibrated. One unusual case involved the perforation of pineapple cans in fiber cases due to leakage (possibly of a single can) near the top of the pile. The juice moistened the cases and cans below and caused the perforation of cans to the bottom of the pile. Seventeen samples of sugar sent in by members of the Association were examined for spoilage bacteria. This statement does not include the considerable number of samples of sugar and other products examined by our field laboratory.

During the year over 3600 letters have been written by members of the laboratory staff, including more than 2600 which were of a technological nature, often involving a considerable study of data in connection with their preparation.

ANNUAL REPORT OF THE WESTERN BRANCH LABORATORY

PROCESSING STUDIES. By J. Russell Esty.

ARTICHOKES—Early in the course of this work it was found that artichokes are susceptible to the same types of spoilage as other non-acid vegetables, such as spinach and asparagus, and that the texture of this product is thoroughly broken down when adequately sterilized. Attempts to sufficiently toughen artichokes so that sterility could be accomplished failed. Acidification procedures were then investigated, using citric acid brines, and experimental packs were made with unblanched, water-blanched and acid-blanched artichoke hearts to determine the minimum amount of acid necessary to definitely inhibit the growth of spoilage organisms. Results from these packs show that to safely preserve artichokes by acidification with citric acid the acidity, expressed in terms of pH, after it has come to a constant value, should not be higher than 4.5.

The factors influencing the pH of this product were also studied. Of the many variable factors involved, the filling-in weight was found to be the most important. As to the effect of blanching, it was found that hearts blanched for five minutes in a boiling 1 per cent citric acid solution require less than one-half the amount of acid required by hearts blanched in boiling water for two minutes.

A report giving the essential facts has been submitted to the canners interested. The factors influencing the acidity of the canned product have been discussed and processing suggestions are offered. The acid requirements are also given for various fills of water and acid-blanched hearts to gvie an equilibrium pH of 4.5 to the canned product.

TOMATOES AND TOMATO PRODUCTS—In our Newsletter No. 5 some of the essential points in the processing of tomatoes and tomato products were discussed. Among other things attention was called to the effect of an increase in the solids content of the tomatoes on the heat penetration and to the fact that the efficiency of a given cook decreases as the specific gravity increases in the case of tomatoes packed with puree. Sterility is accomplished by a proper combination of exhaust and process, together with a method of cooling, and the following suggestions were offered, as given in our Newsletter:

Cans of tomatoes should be exhausted to secure a good vacuum.

For tomatoes and tomato products, when air cooled, the process time should be sufficient to heat the entire content of each can to a minimum temperature of 170 degrees F. at the end of the cook; with water cooling a minimum temperature of 190 degrees should be reached for adequate sterilization.

ASPARAGUS SOUP CUTS—An experimental pack of green asparagus soup cuts in No. 2½ cans was made to determine a minimum cook to prevent botulinus spoilage. In this pack three different fills were used and the lots processed at 240 degrees F. for 20 and 25 minutes, respectively. Each lot contained 72 cans experimentally inoculated with Cl. botulinum spores and an equal number of control cans. Considerable spoilage developed in all the inoculated lots processed at 240 degrees F. for 20 minutes and botulinum toxin was demonstrated in a few cans from each lot, whereas no botulinus spoilage has developed in the lots processed for 25 minutes at 240 degrees F.

CHILI PEPPERS AND PIMIENTOS—Acidity results from experimental packs of chili peppers and pimientos confirm those reported last year, showing that the pH of these products decreases as the product ripens, the redder the product the lower the pH. Several lots were experimentally inoculatd with Cl. botulinum spores and to date no botulinus spoilage has developed in red pimientos, the maximum pH noted being 5.10. In canned chili peppers no spoilage has developed in lots showing a pH below 5.1, but above that value botulinum toxin has been demonstrated.

MEAT PRODUCTS—In collaboration with the Washington Laboratory, heat resistance studies have been made to determine the death times at temperatures ranging from 212 degrees to 240 degrees F. of Cl. botulinum spores in juices pressed from canned corned beef hash, Vienna sausage, roast meat, lunch tongue, tripe in milk, sausage meat, chicken, squab, ham and ham products, and pork extracts. From these test food factors (relation of heat resistance of food juice to standard phosphate solution) have been obtained and used in connection with heat penetration data to determine theoretical processes as a guide in the selection of processes for experimental packs. Thermal death time data has also been obtained on several other products in connection with determining minimum botulinus processes.

ACIDITY STUDIES—The acidity and buffer content of the following fresh and canned vegetables has been studied: Tomatoes, carrots, asparagus, spinach and artichokes. The information gained from this study has been invaluable in connection with the studies on the sterilization of the above mentioned products.

SPRINGER-PERFORATION STDUIES. By G. S. Bohart.

Our studies on this problem have been continued during the past year along the same lines as previously reported, namely, on the effect of variations in canning procedure. It was considered advisable to include grapefruit this year because of the trouble which has been experienced with regard to the formation of hydrogen springers and swells. A summary will be given of the results on a few of the studies which have progressed to a point where conclusions may be drown. In this discussion the term "lot" refers to a unit of 48 cans each. The term "headspace" refers to the measurement from the top of the double seam to the surface of the contents.

ROYAL ANNE CHERRIES IN No. 2½ CANS—Headspace. In the study of this variable 18 lots were used. Nine lots covering exhausts from 0 to 7 minutes at 170 degrees F. were stored at 100 degrees F. The other 9 lots, all exhausted 7 minutes at 190 degrees F., were stored at 80 degrees F. Within the range of headspaces employed (4/16 in. to 9/16 in.), the service time has, without exception, increased with the size of the headspace.

Exhaust. Observations on 15 lots show conclusively that within the range studied the higher the exhaust, as measured by the temperature obtained at the center of the can, the greater the service value. This exhaust range covers time intervals from 0 to 22 minutes and an exhaust box temperature spread from 80 degrees F. to 210 degrees F. The center of the can temperatures ranged from 80 degrees to 204 degrees F.

Length of Cook. Seven lots, in which the time of cook ranged between 5½ minutes and 36 minutes, were packed in three separate canning plants. Of these, four lots were stored at 100 degrees F. and three at 80 degrees F. In each series it has been found that the longer the cook the greater the service time.

Storage Temperature. Three lots each with headspaces of 4/16, 6/16 and 9/16 inches, respectively, were exhausted 7 minutes at 190 degrees F. One lot of each of the three different headspaces was stored at 60 degrees, 80 degrees and 100 degrees F. On the average, cans in a given lot remained flat twice as long at 60 degrees as at 100 degrees F.

LOGANBERRIES IN No. 2 CANS—Headspace. Six lots were exhausted 5 minutes at 205 degrees F., three of which were stored at 100 degrees F. and three at 80 degrees F. The headspaces employed were 4/16 inches, 6/16 inches and 9/16 inches. Service time increased with increased headspace but this effect was not so marked as in Royal Anne cherries.

Length of Cook. Two lots, exhausted 5 minutes at 205 degrees F., were cooked 4¾ minutes and 8 minutes, respectively. These were stored at 80 degrees F. and it was found that, as in the case of Royal Anne cherries, the longer cook gave the greater service value.

Storage Temperature. At one plant three lots were exhausted 5 minutes at 205 degrees F. and subsequently held at 60 degrees, 80 degrees and 100 degrees F., respectively. Two additional lots, packed at another plant, were exhausted 9 minutes at 206 degrees F. and stored, one at 60 degrees and the other at 100 degrees F. At the end of 15 months the losses were as follows: 0 per cent at 60 degrees, 39 per cent at 80 degrees, and 78 per cent at 100 degrees F. It is evident that storage temperature is a greater factor in loganberries than in Royal Anne cherries.

STRAWBERRIES IN No. 2 CANS—Headspace. Three lots each having headspaces of 5/16 inches, 8/16 inches and 10/16 inches, respectively, were exhausted at 206 degrees F. for 2, 7½ and 13½ minutes, respectively. A slight, but consistent, improvement in service value resulted with increasing headspace. No consistent relationship between headspace and perforations was apparent.

Exhaust. The exhaust series is the same as described under "Headspace." For each headspace an improvement in service value resulted with increasing exhaust.

Length of Cook. Two lots were exhausted 7½ minutes at 206 degrees F. and cooked 6 and 12 minutes, respectively. When stored at 100 degrees F. the service time was slightly greater in the lot cooked for 12 minutes.

GRAPEFRUIT IN No. 2 CANS—Variations in exhaust and headspace were included in the ten experimental lots packed in a Florida cannery. An equal number of cans from each lot were placed in storage at 60 degrees and 100 degrees F., respectively, and loss in vacuum in these cans is being followed through the flip vacuum method. Additional cans were provided in each lot on which measurements of actual vacuum, headspace, net weight, drained weight and per cent sugar in the syrup were made shortly after arrival at the laboratory. These data provided information as to the condition of the cans which were put in storage.

These tests have been in progress only six months to date but it is apparent that within the ranges studied, increasing the exhaust and increasing the headspace result in prolonging the life of the can. The temperature of storage has been found to exert a striking effect on springer formation. For instance, in one lot which was considered to have had an adequate exhaust and satisfactory headspace, at the end of three months there was no loss in the cans stored at 60 degrees F., but 42 per cent loss in the cans stored at 100 degrees F. Considerable losses, however, have occurred in all lots at 100 degrees F.

SPECIAL INVESTIGATIONS

By E. F. Cornell and P. C. Wilbur

STORAGE OF PINEAPPLE—The study of the effect of different storage temperatures on the quality of canned pineapple, which was started in August, 1927, has recently been completed. A detailed report giving the observations and data obtained during this period has been submitted to the Association of Hawaiian Pineapple Canners, by whom this project was initiated.

As indicated in our previous reports, three lots of commercially canned pineapple, representing the various styles of packing, have been under observation, samples of one lot having been stored at 40 degrees, 60 degrees, 80 degrees and 100 degrees F., while samples of two lots have been held at the last three temperatures only. A total of eleven cuttings were made on the one lot and nine cuttings on samples of each of the other two lots, representing a storage period of 25 months in the case of the first lot and 24 months in the case of the last two lots. At these cuttings a committee of pineapple men judged the samples with respect to changes in color, flavor and physical condition.

Storage of the canned product at a temperature of 100 degrees F. brings about a marked deterioration in from three to five months. No significant differences in quality developed in the samples stored at 40 degrees and 60 degrees F. The effect of storage at 80 degrees F. began to manifest itself only after a period of 24 months and even in the samples stored for this length of time the deterioration in quality had in no way progressed to the point of that produced by storage for a few months at 100 degrees F. It would thus appear that the critical point in storage lies between 80 degrees and 100 degrees F.

CHANGES IN CUT-OUT SYRUPS IN FRUITS—Studies begun last year with the view of determining both the approximate time required for cut-out syrups of canned fruits to come to constant values and the extent of such changes were continued this year.

The fruits used in these tests included apricots, peaches and plums, packed in No. 2½ cans in 55 degrees, 40 degrees, 25 degrees and 10 degrees Brix syrups, and water, respectively, and Royal Anne cherries and Bartlett pears packed in No. 2½ cans in 40 degrees, 30 degrees, 20 degrees and 10 degrees Brix syrups, and water, respectively.

Cut-out syrup readings were made on the samples the day after packing and at subsequent frequent intervals. In this work use was again made of the refractometer, whereby it was necessary to remove only a few drops of the syrup from a given sample at any one time. The samples were preserved as before by means of a chemical preservative.

The results show again that the syrups tend to come to constant values within a relatively short length of time after packing and that the rate at which they do is dependent upon the character of the fruit itself. The greatest changes naturally take place in those cans packed with the syrup of highest concentration. It is significant that the syrup cut-outs after having come to constant value will be from 0.5 degrees to 2.5 degrees Brix lower than the values obtained the day after packing, depending on the nature of the fruit and the concentration of the going-in syrup. In the fancy pack, for instance, this would amount to from 2 degrees to 2½ degrees in the case of plums, peaches and apricots, and from 1 degree to 1.5 degrees in the case of pears and cherries.

CHANGES IN DRAINED WEIGHT IN FRUITS—When a fruit is processed in a syrup, the sugar concentration of which is substantially higher than that of the fruit itself, the drained weight taken shortly after packing will usually be somewhat less than the filling-in weight of the raw fruit. This "shrinkage" comes about as a result of a process turned "osmosis," whereby water passes through the cell walls of the fruit into syrup surrounding it, thereby diluting it. The extent of this shrinkage depends on the concentrations of sugar in the fruit and in the syrup, the proportion of fruit and syrup in the can and the character of the fruit itself. The greatest change will

occur in a fruit with a low sugar content packed in a syrup of high sugar content. Following this initial loss in weight, there is a gradual absorption of syrup by the fruit, with subsequent increase in weight, until finally, in certain fruits, the drained weights will be found to exceed the filling-in weight.

A series of tests have been made with the view of determining the extent of such changes and the approximate time required for the drained weight to come to equilibrium. For this purpose samples of Blenheim apricots, Phillips peaches and Green Gage plums were packed in No. 2½ cans in 55 degrees, 40 degrees and 25 degrees Brix syrup, respectively, and samples of Bartlett pears and Royal Anne cherries in No. 2½ cans in 40 degrees, 30 degrees and 20 degrees Brix syrups, respectively. These samples were packed under commercial conditions, using the fruit corresponding to the particular grade (fancy, choice or standard) and employing a filling-in weight considered to be representative for the particular fruit. The samples were carefully check-weighed, so that all cans of one fruit had the same filling-in weight.

Drained weights were taken on a number of samples of each grade of each fruit the day after, a week after, a month after and three months after packing. Without an exception, the drained weights taken the day after packing were found to be from 0.8 to 3.6 ounces less than the filling-in weights, depending on the grade and variety of the fruit. On peaches, for instance, this difference was one ounce on the standards, 2.4 ounces on the choice and 3.6 ounces on the fancy. For a given grade of fruit, the drained weights taken a week after packing were found to be higher than those obtained the day after packing, indicating that the fruit had begun to take up syrup. Further increases were noted when samples were drained a month and three months after packing, although even at the latter period only a few had regained the original filling-in weight.

HYDROGEN CAPACITY—The hydrogen capacity of a can may be defined as the amount of hydrogen required to cause a given can to become a springer and is equal to the difference between the amount of gas in the can at the moment and the amount of gas the can will contain at the flipping point. Because of the observed effect of exhaust and headspace on the formation of hydrogen springers a study has been made of the relative effect of vacuum and headspace on the hydrogen capacity. The amount of gas in a can at any moment is determined by the internal pressure and the gas volume or headspace. Because of the non-rigid character of a can the volume is not the same at different internal pressures and, therefore, in order to determine the hydrogen capacity for different vacuums and headspaces, an extensive study was made of the relation between the volume and the internal pressure in 400 cans. The internal pressure required to flip out one end was determined on these same cans.

The present work has been limited to No. 2½ cans of a single contour and plate thickness and from the information obtained tables have been prepared showing the hydrogen capacity for a given vacuum and headspace. It is planned to extend the work to other sizes.

CONSISTENCY OF CANNED PUMPKIN—During the last packing season a preliminary study was made of the causes of variations in the consistency of pumpkin canned in the Pacific Northwest. The pumpkin investigated was a blend of two varieties, one of which was very low in starch and gave a very soft product, the other having a high starch content and giving a stiff product.

With the method of blending in use it was found that the consistency and starch content of the finished product varied greatly in different cans. More efficient blending methods produced a satisfactory, uniform product. Observations were made on the relation of starch and solids to consistency and the increase of consistency with storage time is being studied.

RELATION OF CONDUCTIVITY TO SPECIFIC GRAVITY OF TOMATO PRODUCTS—Preliminary studies have been made of the relation between electrical conductivity and the specific gravity of tomato puree and tomato paste. Samples from different sources and from both whole tomatoes and trimming stock were tested at various temperatures. The electrical conductivity was found to be directly proportional to the specific gravity during concentration indicates that this method may have commercial application.

SERVICE

A total of 490 jobs have been handled for our individual members during the period of January 1st to December 15th, representing an increase of 90 jobs over the total for the entire year of 1928. The relative importance of the various types of problems encountered in the work is shown by the following approximate classification.

Chemical Studies	99
Sterility Tests	100
Causes of Spoilage	42
Process Information	90
Bacteriological Studies	30
Discoloration and Corrosion	18
Off-flavor	10
Check Analyses of tomato products	21
Hydrogen swells and perforations	32
Swell claims	3
Miscellaneous	45

The California State Department of Health submitted a total of 81 of these jobs. Of these, 70 were sterility tests on products under their control, which, according to their records, showed the processing to be irregular or, in the case of spinach, the drained weights to be excessive. The tests showed that in practically every case the product was normal and sterile and the entire batch, consisting of at least one retort load, was therefore released. The saving to the canner effected by this service is conservatively estimated at $50,000. This control work for the State has further served as a definite safeguard to public health by detecting unwholesome food. For example, among the few lots found to be abnormal was a sterile product which was definitely sour, caused by too long a holding period between sealing and processing.

Other agencies, such as the different State canners organizations, have submitted problems, the most interesting of which have been the canning and chemical study of new varieties of spinach and tomatoes for the Canners League of California.

The diversity of the problems encountered in this service work can be brought out by amplifying some of the different headings used in their classification. Under "Chemical Studies" have been included acidity and pH determinations, analyses of sugar, salt, syrup and water samples, and analyses for the presence of metals, preservatives and coloring matter in different foods. Requests for latest information on canning procedures to be used with various products form one of the principal items under "Process Information." These include not only information as to exhausts and cooks but also data as to use of brines, syrups and blanching solutions, the proper filling-in and drained weights and methods and equipment in plant control work. Under "Bacteriological Studies" are grouped toxicity tests, heat resistance studies, examination of materials used in the construction of tanks and blanching equipment, with respect to the presence and significance of spoilage organisms. Included also are the jobs involving a bacteriological spoilage organisms. Included also are the jobs involving a bacteriological examination of samples of sugar, salt, brines, syrups and blanching solutions.

Of the samples submitted for cause of discoloration, copper was found to have been responsible in apple sauce, ravioli, sauerkraut juice, tomato juice and pineapple; a very high iron content accounted for an intense black color in olives; leakage of air into the container for a brown discoloration of pears packed in glass, and stack burning for a caramelized condition of cream style corn. A brown discoloration occurring when pie apricots were allowed to stand in the air appeared to be due to enzymatic action; recooking of the lot in question apparently remedied the condition. A case of marked discoloration in canned grapes was found to be due to the incomplete removal of surfur dust. A strong hydrogen sulphite odor was noticeable on opening these cans.

A very objectionable spangling of the exterior of cans occurring in the cooker was traced to the priming over a highly alkaline boiler water into the cooker. Crystals of a glass-like nature found in canned tuna were identified as struvite. This is the first time that the occurrence of these crystals in tuna has come to our attention, although a number of instances of their appearance in canned shrimp and salmon have been reported. An off-flavor in canned ripe olives was traced to the paint used on tanks in which the olives had been stored during the canning process.

Check analyses on 21 different lots of tomato products were made for specific gravity, total solids, mold, yeast and bacteria. Included in these were catsup, juice, puree and paste. Instruction has been given to several analysts from different canning companies in the Howard method for mold count and in methods for determining specific gravity and total solids of tomato products.

About 1250 letters were written by members of the laboratory staff, of which over 700 contained technological information.

Report of the Bureau of Raw Products Research

By C. G. Woodbury, *Director*

THE conferences on raw products problems, in progress at the convention, are a recognition of what is perhaps the most difficult problem before the Raw Products Bureau. That is the problem of how to get before the members of the association the latest information on agricultural research results which are available and ready for practical application in crop production programs.

Experience of the Raw Products Bureau suggests that where canners are themselves directly responsible for production through operation of land, the contact with the work of the Raw Products Bureau is likely to be active. The results are tangible. The great bulk of raw products are grown on the contract basis, however, and in such cases the problem is a real one of how best to get new facts to the canners field men and others who are working directly with the growers, so that they may be used and the results reflected in improved quality, lowered costs, and reduced crop hazards.

Suggestions as to how this problem can be met more effectively and the work of the Raw Products Bureau made more useful thereby are earnestly sought, both from members of this committee and from association members generally.

As has been stated to the Committee before, the job of the Raw Products Research Bureau is to keep the agricultural research institutions informed in regard to the crop production problems of the canning industry and of the growers of canning crops. Coupled with this, of course, is the effort to enlist their interest and co-operation so far as possible in working out the answers to these problems. It is also part of the job of the Raw Products Bureau to keep the members of the Association informed in regard to the current findings in agricultural research which are available and ready for practical application in crop production programs.

Direct service to members on individual problems is undertaken so far as possible. In accordance with the suggestion of the Association's Committee on Scientific Research, the direct service activities of the Bureau are, in general subordinate to the main objective of developing contact with the State and Federal agricultural research groups.

The conferences on raw products topics in progress during this convention are a logical step in bringing about exchange of information and ideas between agricultural scientists and canners who may be able to utilize more fully the results being secured from current agricultural studies. Personal discussion by canners' production men of problems of variety improvement and pest control with specialists in these fields is one of the best ways to get the available information into effective use.

CANNERS' SCHOOLS

During the present winter, several of the Agricultural Colleges are conducting two and three-day special schools for canners. These are planned especially to acquaint field men and others interested in crop production with recent information which may be applied profitably in the improvement of crop production methods. Indiana, Maryland, New York State, Wisconsin and Ohio are among the States in which the results of raw products research are being presented this winter in special meetings for canners and their field men, with full opportunity for questions and informal discussion. Similar work is being done in the northwest. We hope that canners generally will lend their co-operation in making this effort of the colleges productive of valuable results.

COMMENTS ON SOME RAW PRODUCTS PROJECTS

The Raw Products Bureau is not organized for conducting original research. The projects, therefore, to which reference is made are among those being carried on by the Federal Department of Agriculture or by State Experiment Stations. The number of investigations under way in these institutions in horticultural science, plant breeding, entomology, plant pathology and plant physiology which have a bearing on some phase of canning crops agriculture, aggregate several hundred. It is obviously impossible for the Raw Products Bureau to keep in active touch with each and every one, desirable as this might be.

PREPAREDNESS PAID IN FIGHTING BEAN BEETLE

Too often in meeting a new production problem it is impossible to get the available information into actual use until crop failures have aroused a desperate interest. The advent of Mexican bean beetle in the Tri-State territory last year offers an encouraging illustration of the practical value of research and of the fact that it is not always necessary to wait until the car is stolen before locking the garage door.

In 1928 the beetle appeared in various points in the Tri-States but not in sufficient numbers to cause appreciable damage nor to cause alarm. Federal entomologists, however, had been fighting the insect in other sections for several years. A close watch, therefore, was kept both by State and Federal agents on conditions in the Tri-States which might determine the beetle population in 1929. It was found that all conditions indicated low winter mortality and a great increase in 1929. Through eight or nine years of careful experimenting in the South, much had been learned about materials and methods of application for holding the beetle in check. The remedy was ready.

Canners were advised that 1929 would probably see extensive crop damage to beans unless control measures were applied. A meeting was called by Maryland University to explain what to do. Over 200 canners and bean growers attended. Equipment was secured and plans were made by canners to see that the control methods were carried out on all canning acreage. The immense increase of beetle population developed as per forecast. Sprayers and dusters were ready in all bean canning communities. Materials had been ordered in advance. The control was applied and with very few exceptions the beetle was prevented from damaging the canning crop. The ravages of the beetle in many market garden patches showed convincingly what would have happened to canners and their growers if they had not been ready for the beetle.

Through previous research, so that the needed facts on control were available; through the organization of the information by college and extension forces, and finally through the ready co-operation of canners, the bean beetle was beaten in the Tri-States in 1929.

CROP REPORTING

The Division of Crop and Livestock Estimates, in co-operation with the Association, early in the year worked out schedules for reports on canning crops. With respect to sweet corn and peas, these provide for statistical reports on condition at intervals of two weeks during the growing season. Experience during the past season has shown the difficulty of obtaining condition reports on a statistical basis at such short intervals with the very limited field force available for this work. It is now proposed to base bi-monthly condition reports on comments and percentage estimates instead of attempting to make a complete statistical survey every two weeks. It is felt by those in charge of the work that it will be possible to continue the condition reports on this basis and that the value of the service will be reduced very little, if any, by the change.

MEDITERRANEAN FRUIT FLY

At the meeting of the Board of Directors on May 25, 1929, resolutions were passed commending the Plant Quarantine and Control Administration, U. S. D. A. and the Florida State authorities, for their vigorous prosecution of the fruit fly eradication campaign and urging adequate appropriations for support of this work.

Remarkable progress has been made during the past season both by the research forces and the quarantine and eradication division in bringing the fruit fly under apparent control. In spite of most intensive scouting and extensive use of traps, no specimen of adult fiy has been discovered in Florida since the middle of last August. From that time until November 16 no infested fruit was found. On November 16 a single infested orange was discovered. Methods of treatment of citrus have been devised which will kill any fruit fly larvae, if present, without injury to the fruit. This has permitted the distribution of Florida fruit in commerce without danger of introducing the pest into new territories. The regulations provide, however, for the destruction of any fruit known to be infested.

As a guide to appropriation policies, a special committee was recently appointed to make a survey of the fruit fly situation. The report of this committee would seem to indicate that a substantial saving may be effected in the amount of money originally thought necessary to complete the eradication program. The budget submitted to Congress provides a total of $15,381,000 for Mediterranean fruit fly, including quarantine, scouting and research.

PEACHES

Encouraging progress is being made in the breeding of improved varieties of peaches for canning. This project of the United States Bureau of Plant Industry is being advanced through the very helpful co-operation of the Canners League and through the use of land and other facilities afforded by

Stanford University. The Michigan Experiment Station reports the introduction of a new peach variety for canning purposes in that State. Propagation is now being carried on and the variety will be offered for commercial test as soon as the trees are available in quantity.

FOREIGN VARIETIES OF PEACHES, APRICOTS AND OTHER FRUITS

The office of Foreign Seed and Plant Introduction is maintained by the United States Department of Agriculture for the purpose of the bringing in, under proper safeguards, of plant material from foreign countries which may prove of value to the United States. The funds available for foreign exploration are woefully inadequate. There is excellent reason for believing that many varities of apricot, peach and other fruits are growing in the countries bordering the Mediterranean, which either directly or for purposes of breeding, would be of untold value to the canning industry. Other sorts might be of just as great value for use as stocks, to correct the faults found in some of the peach and apricot stocks now in use. The importance of thorough exploration of the Mediterranean basin was emphasized by the wealth of new and (to American) unknown sorts observed by Mr. Wight in his brief exploration a year or more ago in Northern Africa and in Italy and Sicily. An explorer now on a trip in Persia is giving special attention to peach and apricot varieties. Additional appropriations are seriously needed to make the foreign exploration work of the Office of Foreign Seed and Plant Introduction more nearly adequate to the needs.

SMALL FRUIT BREEDING

The breeding of better varieties of strawberries for canning is receiving special attention in the Bureau of Plant Industry and in the Oregon and Minnesota Experiment Stations. The breeding of raspberries is engaging the attention of specialists in both State and Federal departments, while in Maine and in the Department of Agriculture, blueberry improvement experiments and breeding of new varieties are being carried on.

BEETS

The Ohio Experiment Station has developed a new beet. The new strain was submitted to a few interested canners for test in 1929 and for comparison with Detroit Dark Red. Many favorable comments were received by the station, especially on the color of the new beet. In the opinion of one canner the flavor was slightly inferior to Detroit Dark Red but all who tried the new strain commented favorably on its color.

The question of how beet color is affected by soil type and temperatures and to what degree color in the raw product is a genetic factor is one on which interesting work is in progress but no summary statement is yet possible. Evidence so far suggests that raw product color may be more largely determined by genetic and less by environmental differences than has been generally believed.

EUROPEAN CORN BORER

According to the United States Bureau of Entomology, the progress of corn borer during the past season was about normal. In the middle western area (Michigan, Indiana, Ohio, Pennsylvania and Western New York) there was a slight increase (from 3.17 to 3.76 per cent) in average number of plants infested; a very slight decrease in average number of larvae per infested plant (from 2.10 per cent to 2.07 per cent) and an increase in total number of larvae per 100 plants from 6.65 to 7.78.

Dr. Larrimer, in general administrative charge of the corn borer work, in summarizing the season's developments, says:

"For the Great Lakes area as a whole, last season was generally unfavorable to the borer. There was only a slight increase in average abundance for the entire area, and in Michigan there was a decrease. The situation is roughly similar to that in 1926, the year immediately preceding the big clean-up campaign in the spring of 1927. Given a favorable season, enough borers are present in the older infested section to cause a serious infestation in 1930 unless farmers apply control measures on an adequate scale. This is particularly true of the Maumee Valley in northwestern Ohio, an area we will watch with intense interest next season.

"The outlook is dark to those who are just becoming acquainted with the borer or are hearing of it for the first time. Those familiar with developments, however, find considerable reason for encouragement. To stop the spread of the borer would require extermination. To exterminate the borer we would have to make a desert of all the infested territory. It is safe to conclude that the borer eventually will spread through the entire Corn Belt. Considerable damage will result, some of it unavoidable. But this does not imply the complete ruin of the corn crop.

"In the Ontario area, where damage was so severe in 1925 and 1926, farmers have been conscientious in applying control measures, and corn acreage is again increasing over the low mark of 1927. This year the acreage in Kent and Essex Counties was 10 per cent greater than last year, and more than 35 per cent greater than in 1927. It is to be hoped that the farmers of our own Corn Belt need not experience such wholesale destruction to learn the value of timely application of practical control measures.

"The survey this year revealed infestation in 314 new townships, of which 3 are in Pennsylvania, 10 in West Virginia, 137 in Ohio, 105 in Indiana, and 59 in Michigan. The farthest point west at which the borer was found was in Porter County, Ind., in the extreme northwestern part of the State, the second county from the Illinois line; and the farthest South, in Gallia County, Ohio, which is on the Ohio River at about the middle of the southern boundary of the State.

"In a few fields in Ohio and Michigan, losses in yield estimated at from 10 to 30 per cent were observed. Traces of injury were evident in more fields than ever before. In the less densely infested areas to the east, south and west, damage was not evident and the infestation was comparatively light."

Agents of the Bureau of Entomology have made an intensive study of corn borer in central Europe in regions where the corn crop is of greatest importance and where the borer has been long established. Much has been learned in regard to detailed weather conditions which affect the rapidity of the borer's increase and the resultant crop injury. It is believed that application of the same type of study to the middle western corn belt would be of great practical value to growers and canners of sweet corn as well as to all other corn interests.

In Ohio it was demonstrated convincingly through the use of half-acre cages that thorough turning-under of all crop residue destroys all but a small proportion of the borer population.

TOMATO IMPROVEMENT PROJECTS

Efforts to improve quality and yield of tomatoes are proceeding along several lines. These include the study of factors affecting tomato color, in both the raw and finished product; further research on tomato diseases especially in connection with bacterial canker and tomato yellows; enlargement of the Ten Ton Tomato Club work in Indiana and Maryland and the expansion of the Indiana studies on the effects of buying raw stock on grade; continuation of the tomato breeding work by the U. S. D. A. to produce an earlier tomato equal to or better than Marglobe; and the production on a commercial scale of tomato seed of known purity and excellence and its sale by local canners' organizations in Indiana, Maryland and some other states.

PEA SEED IMPROVEMENT AND PEA SEED DISEASES

The University of Wisconsin in continuing the effort to produce improved varieties or strains of peas of canning varieties. The University is also co-operationg closely with the Wisconsin Canners Seed Corporation in the pea breeding program of that organization. No other public agricultural research institution is carrying on definite variety improvement and breeding work with canners peas so far as we know. This is in contrast to the situation with sweet corn in which seven or eight experiment stations are actively interested.

Research in connection with pea diseases has been nearly at a standstill since Dr. Linford left this work to become associated with the Pineapple Experiment Station in Hawaii. Dr. Linford's study of the severity and distribution of pea root rot and wilt opened up many important leads for much needed research in this field which will have to wait until additional funds are available.

SWEET CORN VARIETY IMPROVEMENT

Breeding of sweet corn for the production of improved strains is being carried on at a number of experiment stations, including those in New York, Connecticut Wisconsin, Minnesota, Iowa, Maryland, Illinois, and Indiana.

The orthodox method appears to be to produce pure lines through three or more years of selfing, discarding during this process the weakling strains and eliminating many undesirable characters. The second step is to recombine pure lines and build up the improved strains from material of known genetic composition.

Experimental work has shown that higher yields and much greater uniformity in all plant characters can be brought about through these methods.

The question which is by no means fully answered as yet for the canning industry is this: How may the canner who has an

agricultural organization and how may the seedsmen most practically co-operate with the scientific breeder and bridge the gap between their small scale experimental seed production and the commercial seed requirements of the industry.

We have pressed this question at every opportunity for several years and while progress is being made, a complete answer is not yet available.

The conference on this matter this week will, we hope, be helpful in pointing out the direction for more rapid progress.

PUMPKIN AND SQUASH VARIETIES

The question of variety in pumpkin and squash is apparently more interesting to canners today than ever before. In the middle west and east, the Connecticut Field or Sugar pumpkin and the Large Cheese types have been favorite sorts. Boston Marrow has been used with much satisfaction in several sections. In the northwest both Boston Marrow and Golden Delicious have been used extensively. Some western canners wish a variety which will yield a finished product of lighter consistency. In the middle west there is considerable interest in finding a variety which will yield a heavier consistency. Without discounting the effect on the finished product of differences in method of preparing the product for canning, it appears that the variety of the raw product has an important relation to the yield in cans per ton and to body or consistency of the finished product.

The interest of canners in the relation between the raw product variety and the quality and body of the product in the can represents a change from the prevailing sentiment a few years ago when field tonnage was practically the only characteristic considered important.

The recent studies of Erwin of Iowa, who has worked out a new classification of pumpkin and squash varieties, throws new light on the question of intercrossing. It is shown that under field conditions crosses between species do not occur, and that pure lines "may be maintained at a high degree of productivity and vigor through selection of the most prolific strains."

INVESTIGATIONS OF SEED BORNE DISEASES OF GREEN AND WAX BEANS

Anthracnose, mosaic and bacterial blight are diseases which continually menace the success of the grower and canner of green and wax beans. With each of these troubles, one of the most important methods of dissemination is through infected seed. Anthracnose does not develop appreciably in the intermountain seed growing regions and an infected seed stock may be cleaned up by growing it for a year in the west. The bacterial blight and mosaic, however, are prevalent in the west and in the territories where each occurs may be a serious handicap to the growing of the seed crop as they are in the canners' acreage on which the seed crop is used.

The U. S. D. A. for two seasons has had a specialist in bean diseases working throughout the entire crop production season in the western seed growing states. Headquarters have been in southern Idaho. The occurrence and distribution of the seed borne diseases of beans has been studied in Colorado, Idaho, Utah, Montana, Wyoming, and California. Refugee seed crops in Colorado which in 1928 showed little or no mosaic were abundantly infected in 1929. Mosaic was unusually abundant and destructive in New York State in 1929, while anthracnose injury due to the dry season was much less severe than in 1928, even where infected seed was used.

FAILURE OF HENDERSON BUSH LIMAS IN 1929

Many canners with their growers suffered extensive losses during the past season from failure of Henderson Bush Limas to produce a stand of plants in the field. In some cases practically none of the seed germinated, while in many other cases a poor, irregular stand was produced, with stunted retarded plants, resulting in low yield or stands plowed under.

Studies of the situation by the pathologists of the U. S. D. A. revealed that in most cases of poor germination the seed coats were cracked. The condition suggested strongly that the injuries to the seed were of a kind which might have been caused in threshing. The abnormally high temperatures in the bush lima seed growing section of California during the fall of 1928, it was thought, might have made the seed drier and consequently more brittle and more easily injured in threshing than usual. A few seed lots were found, however, which germinated poorly or not at all, but which showed no evidence of mechanical injury. The Department of Agriculture has published no report on the investigation as yet and the final result of its study of the situation will be received with interest of canners and by the seed growers.

Studies of Henderson bush lima seed production in California show that with possibility one or two exceptions, seed growers have apparently made little serious effort to maintain the purity and uniformity of the type by developing new stock, for indivual plant selections. This is in contrast to the excellent and painstaking work of a number of seedsmen with canners' varieties of peas and of green and wax beans.

RAW PRODUCTS PUBLICATIONS

The following is a partial list of publications of the United States Department of Agriculture and State Agricultural Experiment Stations issued during the latter part of 1928 and 1929 which may be of interest from the standpoint of canning crops production. Technical articles bearing on agricultural research published in the scientific journals and articles on canners' raw products appearing in the trade papers and farm press are not included.

VEGETABLES

ASPARAGUS—Asparagus and Its Culture. By V. A. Tiedjens, W. D. Whitcomb, R. M. Koon. Ext. Leaflet 49, Extension Service, Mass. Agricultural College, Amherst, Mass.

Nitrate Assimilation by Asparagus in the Absence of Light. By G. T. Nightingale and L. G. Schermerhorn. Bul. 476, N. J. Agr. Exp. Sta., New Brunswick, N. J.

BEANS—Growing String Beans for the Canning Factory. By George E. Starr. Ext. Bul. 82, Extension Division, Mich. State College, East Lansing, Mich.

Growing Lima Beans for the Canning Factory. By George E. Starr. Ext. Bul. 81, Extension Division, Mich. State College, East Lansing, Mich.

Spraying Experiments with Bush Lima Beans. By E. E. Clayton. Bul. 558, N. Y. State Agr. Exp. Sta., Geneva, N. Y.

Symptomatology, Transmission, Infection and Control of Bean Mosaic in Idaho. By W. H. Pierce and C. W. Hungerford. Res. Bul. 7, Agr. Exp. Sta., Univ. of Idaho, Moscow, Idaho.

The Mexican Bean Beetle in Eastern Virginia. By P. J. Chapman and G. E. Gould. Bul. 65, Va. Truck Exp. Sta., Norfolk, Va.

The Mexican Bean Beetle, 1928-1929. By C. O. Eddy and W. H. Clarke. Bul. 258, S. C. Agr. Exp. Sta. of Clemson Agr. College, Clemson College, S. C.

The Mexican Bean Beetle and How to Control It. By Clyde C. Hamilton. Cir. 216, N. J. Agr. Exp. Sta., New Brunswick, New Jersey.

CABBAGE — Studies of Premature Flower Formation in Wintered-Over Cabbage. By Victor R. Boswell. Bul. 313, Agr. Exp. Sta., Univ. of Md., College Park, Md.

CORN—Relation of Husk Covering to Smut of Corn Ears. By C. H. Kyle. Tech. Bul. 120, U. S. D. A., Washington, D. C.

Further Experiments with Seed Treatments for Sweet Corn Diseases. By C. S. Reddy and J. R. Holbert. Reprint from v. 36, no. 3, Jour. of Agricultural Research, U. S. Government Printing Office, Washington, D. C.

An Economic Study of the Production of Sweet Corn and Peas in Maryland. By S. H. DeVault and W. P. Walker. Bul. 305, Agr. Exp. Sta., Univ. of Md., College Park, Md.

Inheritance of Kernel Arrangement in Sweet Corn. By W. A. Huelsen and M. C. Gillis. Bul. 320, Agr. Exp. Sta., Univ. of Illinois, Urbana, Illinois.

Low-Cutting Devices for Harvesting Corn. By Frank Irons and W. J. Parvis. Misc. Pub. 56, U. S. D. A., Washington, D. C.

Some Factors Determining Corn Borer Damage. By L. H. Patch. Reprint from v. 22, no. 1, Jour. of Economic Entomology, Amer. Assn. of Economic Entomologists, Geneva, N. Y.

Heat and Time of Exposure Necessary to Kill Larvae of the European Corn Borer in Ear Corn. By George W. Barber. Cir. 71, U. S. D. A., Washington, D. C.

European Corn Borer in Pennsylvania. By T. L. Guyton and P. G. Brown. Gen. Bul. 469, Pa. Dept. of Agriculture, Harrisburg, Pa.

CUCUMBERS—Cucumber Beetles. Cir. 113, N. Y. State Agr. Exp. Sta., Geneva, N. Y.

Control Measures for Cucumber Beetles. H. C. Huckett. Tech. Bul. 148, N. Y. State Agr. Exp. Sta., Geneva, N. Y.

MUSHROOMS—Mushroom Culture for Amateurs. By Vera K. Charles. Farmers Bul. 1587, U. S. D. A., Washington, D. C.

ONIONS — The Culture of Onions in Indiana. By H. D. Brown. Cir. 158, Agr. Exp. Sta., Lafayette, Ind.

PEAS—Growing Peas for the Canning Factory. By George E. Starr. Ext. Bul. 83, Mich. State College, East Lansing, Mich.

The Production and Marketing of New York Market Peas. By Dilworth Walker. Bul. 475, Agr. Exp. Sta., Cornell Univ., Ithaca, N. Y.

Factors Influencing Yield and Quality of Peas—Biophysical and Biochemical Studies. By Victor R. Boswell. Bul. 306, Agr. Exp. Sta., Univ. of Md., College Park, Md.

The Known Predacious and Parasitic Enemies of the Pea Aphid in North America. By C. L. Fluke. Res. Bul. 93, Agr. Exp. Sta., Univ. of Wisconsin, Madison, Wis.

PEPPERS—Pimiento Peppers. By J. G. Woodroof and J. E. Bailey. Bul. 150, Ga. Exp. Sta., Experiment, Ga.

SPINACH—Spinach Fertilization with Synthetic Nitrogen Salts. By H. H. Zimmerley. Bul. 63, Va. Truck Exp: Sta., Norfolk, Va.

A Study of Spinach Varieties with Special Reference to Their Canning Qualities. By Horace B. Farley. Bul. 307, Agr. Exp. Sta., Univ. of Md., College Park, Md.

Variety Studies of Spinach. By Fred W. Geise and H. B. Farley. Bul. 312, Agr. Exp. Sta., Univ. of Md., College Park, Maryland.

SQUASH—Species and Varietal Crosses in Cucurbits. By A. T. Erwin and E. S. Haber. Bul. 263, Agr. Exp. Sta., Iowa State College of Agriculture, Ames, Iowa.

SWEET POTATOES—Sweet Potato Fertilizers. By H. H. Zimmerley. Bul. 66, Va. Truck Exp. Sta., Norfolk, Va.

A Monographic Study of Sweet Potato Diseases and Their Control. By L. L. Harter and J. J. Weimer. Tech. Bul. 99, U. S. D. A., Washington, D. C.

Fertilizer Studies and the Production of Sweet Potatoes. By Fred W. Geise. Bul. 311, Agr. Exp. Sta., Univ. of Md., College Park, Md.

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The Nematode Disease of Sweet Potatoes. Bul. 265, Agr. Exp. Sta., N. C. State College of Agriculture, Raleigh, N. C.

TOMATOES—An Economic Study of the Production of Tomatoes in Maryland. By W. P. Walker. Bul. 304, Agr. Exp. Sta., Univ. of Md., College Park, Md.

Tomato Quality as Influenced by the Relative Amount of Outer and Inner Wall Region. By J. H. MacGillivray and O. W. Ford. Bul. 327, Agr. Exp. Sta., Purdue Univ., Lafayette, Ind.

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Development of Nailhead Spot of Tomatoes During Transit and Marketing. By G. B. Ramsey and Alice A. Bailey. Reprint from v. 38, no. 3, Jour. of Agricultural Research, U. S. Government Printing Office, Washington, D. C.

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Fusarium Wilt of Tomato in Virginia. By F. P. McWhorter and M. M. Parker. Bul. 64, Va. Truck Exp. Sta., Norfolk, Va.

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Common Pests of Field and Garden Crops. By R. H. Pettit. Spec. Bul. 183, Agr. Exp. Sta., Mich. State College, East Lansing, Mich.

Additional Host Plants of Curly Top. By Henry H. P. Severin. V. 3, no. 20, Hilgardia, Cal. Agr. Exp. Sta., Univ. of Cal., Berkeley, Calif.

The Respiration Factor in the Deterioration of Fresh Vegetables at Room Temperature. By Marjorie P. Benoy. Reprint from v. 39, no. 1, Jour. of Agricultural Research, U. S. Government Printing Office, Washington, D. C.

Commercial Varieties of Vegetables for New York State. By H. W. Schneck. Cornell Ext. Bul. 176, N. Y. State College of Agriculture, Cornell Univ., Ithaca, N. Y.

The Manufacture and Distribution of Tomatoes, Sweet Corn and Peas in Maryland. By W. J. Hart. Bul. 301, Agr. Exp. Sta., Univ. of Md., College Park, Md.

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BLACKBERRIES — Blackberries, Raspberries and Dewberries. By H. G. Swartwout. Bul. 265, Agr. Exp. Sta., Univ. of Missouri, Columbia, Mo.

BLUEBERRIES—Blueberry Growing—A New Industry in Washington. By D. J. Crowley, Pop. Bul. 144, Agr. Exp. Sta., State College of Wash., Pullman, Wash.

CHERRIES—Cherry Pollination Studies. By J. S. Shoemaker. Bul. 422, Ohio Agr. Exp. Sta., Wooster, Ohio.

Investigations Relating to the Handling of Sweet Cherries. By Henry Hartman and D. E. Bullis. Sta. Bul. 247, Agr. Exp. Sta., Ore. State Agr. College, Corvallis, Ore.

CRANBERRIES—Lead Arsenate Studies on Cranberry Bogs in New Jersey. By Byrley F. Driggers. Bul. 480, N. J. Agr. Exp. Sta., New Brunswick, N. J.

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APPLES—Oregon Apple Prices by Variety, Grade and Size, 1922-1926. By Ralph H. Besse and M. H. Cooper. Sta. Bul. 244, Agr. Exp. Sta., Ore. State Agricultural College, Corvallis, Oregon.

What Does it Cost to Grow a Bushel of Apples? By F. H. Ballou. Bul. 435, Ohio Agr. Exp. Sta., Wooster, Ohio.

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The McIntosh Apple Industry in Western Montana. By Sherman E. Johnson. Bul. 218, Agr. Exp. Sta., Univ. of Montana, Bozeman, Montana.

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Proximate Composition of Fresh Fruits. By Charlotte Chatfield and Laura I. McLaughlin. Cir. 50, U. S. D. A., Washington, D. C.

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Studies of Arsenical Injuries and Correctives. By Joseph M. Ginsburg. Bul. 468, N. J. Agr. Exp. Sta., New Brunswick, N. J.

Mediterranean and Other Fruit Flies. By H. J. Quayle. Cir. 315, Agr. Exp. Sta., Univ. of Calif., Berkeley, Calif.

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The Freezing Temperatures of Some Fruits, Vegetables, and Cut Flowers. By R. C. Wright. Dept. Bul. 113-D, U. S. D. A., Washington, D. C.

Essentials of a Mulch Paper Laying Machine. By H. H. Musselman. Cir. Bul. 126, Agr. Exp. Sta., Mich. State College, East Lansing, Mich.

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ANNUAL REPORT OF HOME ECONOMICS WORK

By RUTH ATWATER

DURING the two years and five months which have elapsed since the Home Economics work of the National Canners Association was inaugurated, considerable progress has been made in bringing the findings of the research work of the Association to consuming groups.

Consumer reactions concerning canned foods have been obtained which have proved of interest to the industry. This inter-relation of canner and ultimate consumer, resulting in a mutual exchange of ideas, is proving to be of benefit to both groups. As the aim of the Home Economics work of the Association is to increase consumer interest in the products of the industry, many methods have been employed to bring about this exchange of ideas.

The co-operation between the schools, colleges and universities, the extension service, dietitias, magazine and newspaper editors, and many other groups interested in food consumption and distribution has been strengthened this year.

Indications of the increased interest of these groups in the research findings of the Association has been seen in the increased requests for our bulletin material. During the twelve months' period under consideration, 45,332 bulletins have been sent out from this office. Bulletins have been sent to every State in the United States and to many Provinces in Canada, as well as to England, Belgium, Mexico, Switzerland, Porto Rico, Brazil, Lithuania, China, Panama, the Philippine and Hawaiian Islands.

In 1928 the geographical distribution included every state in the United States, several Canadian Provinces, China and the Philippine Islands. Nine new countries have been added to the geographical distribution this year, making a total of twelve foreign countries that have received this material.

The total number of letters sent out in 1929 through the office of Home Economics was 4,344, of these 653 were mimeographed. Last year the total number of letters sent out in twelve months was 3,982, of which 1,231 were mimeographed. This shows an increase in typewritten letters of about thirty-four per cent over those sent out in 1928. The types of questions answered in these letters were exceedingly varied.

Contracts with the press have been widened this year. Twenty-one articles have been written. These included two for farm weeklies, one for a farm magazine, one for a college bulletin, two for a house organ having a circulation of one hundred and fifty thousand, one for a woman's magazine having national circulation, and one for a Home Economics magazine having national circulation; also thirteen short popular articles. The fact that there were all written by request is gratifying.

Invitations to speak and an extension of contacts with the industry have made it necessary for the Director of Home Economics to travel over twenty-one thousand miles.

It has been interesting to note the variety of groups who have requested addresses this year. These groups included conferences of rural women, university, college and high school classes, as well as Home Economics women in business, dietitians and extension workers, two groups of canned foods salesmen and state canners meetings. Two commodity groups of the National Association at the Annual Convention in Chicago are also included in this list, as well as two national conventions of trained consumer groups, the American Home Economics Association annual meeting in Boston in July and the American Dietetic Association annual meeting in Detroit in October, together with the Chicago Section of the American Chemical Society in January. This completes the list. Sixty-eight addresses have been made in order to meet these requests.

Addresses made to the groups mentioned have fallen more or less into two general classifications, those dealing with the material that the Association has to bring to the consumer, and an interpretation of consumer desires to the industry.

The series of lantern slides, which were prepared early in the year, showing the production and harvesting of food for canning, as well as the handling of food in the canning plant, have interested many types of audiences. One use of these slides has been in high school work. Classes studying commercial geography or commercial history or the general high school subjects have been interested in seeing them. In June two thousand students, both boys and girls, in the Roosevelt High School, New York, saw the slides and found them interesting. Marketing classes in university work have found them helpful, as well as the dietitians of the District of Columbia Dietitic Association.

Contacts with the industry have been strengthened by visits to many of the members of the Association in Massachusetts and Maine, by personal conferences at the national and state conventions, and at various meetings in Washington and Chicago.

Visits to plants are of the utmost value to the Home Economics work, for women are much more fully convinced of the value of canned foods when they can be told "I know that such and such things are true because I have seen them done." Nothing convinces women as completely as first-hand information of this nature. Women are interested in the sanitation of canning plants, in the health and working conditions of the workers, and in the mechanics and volume of production. Curious legends persist in many consumers' minds, and in order to combat these a positive statement based on personal observation and experience is most effective in helping to overcome these fallacies.

It has been possible, thanks to the courtesy of the members of the Association, for the Director of Home Economics to see many varieties of products packed. There are still a few outstanding products that it has not been possible to see prepared. It would be desirable, as soon as is practical, for visits to be made which would include these products, for without first-hand information obtainable through such visits, the work is sometimes hampered. It is almost always possible on such field trips to include both educational contacts and contacts with the industry, thus widening the range of work materially.

Contacts with professional organizations have been strengthened this year. The Director of Home Economics was asked to act as the Chairman of the Work Committee which formulates the work program of the Business Group of the American Home Economics Association. The program of this influential group of trained Home Economics women is usually one of the most effective programs undertaken by the Association. The program for this year has been outlined, accepted by the Executive Committee of the Association, and is functioning.

The Director of Home Economics also served as a member of the Nomination Committee of the Business Group of the American Home Economics Association at the national convention held last July in Boston.

She was re-elected Chairman of the Washington Group of Home Economics Women in Business, and is also Chairman of the Program Committee of the District of Columbia Dietetic Association. These two offices make her a member of the Executive Committee of each Association.

The Washington Zonta Club, a classification luncheon club of business and professional women, invited her to join their organization in June. As the confederation is national in scope, it has been of great value already in making contacts, not only in Washington but wherever she happens to be.

The can companies have co-operated splendidly with the Home Economics work by sending out three hundred and eighty-four exhibits of empty, unlabeled cans, showing the assortment of can sizes most easily available in every community. Some of the cans are enameled lined, showing both fruit and corn enamel. Covers are sent with this exhibit, and women have been much interested in this material. These exhibits have been used frequently to illustrate points in addresses, and they have been very helpful. Audiences are interested in seeing the variety of can sizes and in the structure of the can.

Revision of the recipes of four of the Association bulletins has been a part of the work of the Home Economics Division this year.

The fellowship granted the Foods Department of the University of Minnesota by the National Canners Association, at the request of the Director of Home Economics, will be used for testing a series of canned food recipes designed to serve large groups. Many requests have been received from cafeteria managers for recipes designed to serve a large group of people, and when this recipe bulletin is completed it will fill this need. This first bulletin will be concentrated on those products most often served in cafeterias, and if the need for other similar bulletins should arise it may be thought advisable to have such bulletins prepared. The Association is fortunate in obtaining the services of the Food Department of the University of Minnesota, under the direction of Miss Alice Child, for this work.

It would be very desirable if more newspaper and magazine editors could be brought in touch with the research material of the Association. That phase of our work has been extended this past year, but a much wider expansion would be highly desirable.

A brief, probably four page leaflet, giving condensed information suitable for rural women would be much appreciated by the extension group with whom the Association has built up nation-wide contacts.

It is desirable to make the spread of the bulletin material wider each year, and as it seems that the opportunities for such requested distribution are only limited by the budget, this should not prove difficult to accomplish. Bulletin material sent in response to such requests as the educational world makes to the Association proves to be of value in giving information to a rather highly selected group, who in turn pass this information along to those with whom they come in contact either as students, groups of rural women, dietitians in training, or future food writers.

It is impossible for one person to cover the field adequately each year, but if this work is to grow it must be built along the right lines. The growth shown during the current year seems to indicate that this is at least one useful method of approach. The work should be expanded as rapidly as time and opportunity permit. Any suggestions from the members of this Committee or from any member of the Association will be welcomed. The desire is to keep the work of moulding consumer opinion entirely flexible so that it may serve the varying needs of the industry.

If this work has accomplished anything by way of building consumer confidence, this has been made possible only because of the splendid co-operation which has been received from every member of the Association. It is only through such co-operation and by constant adjustment to the needs of the industry that the work will increasingly become an integral part of the Association service.

BOARD OF DIRECTORS MEETING

SATURDAY AFTERNOON, JAN. 18, 1930

THE Board of Directors met in the Stevens Hotel on Saturday afternoon, January 18, 1930.

Mr. Ben C. Nott, Chairman of the Finance Committee, presented the report of the audit of the Treasurer's books for the period from January 11, 1929, to January 8, 1930, and submitted an estimate of the income of the Association for the year 1930. The budget for 1930, as recommended by the Finance and Executive Committees was then presented and approved by the Board.

The Board approved for the year 1930, the same rate of dues as in 1929, that is, one-third cent per case on seasonal products and one-eighth cent per case on non-seasonal products. Pending applications for memberships in the Association were then acted upon by the Board, which also unanimously voted that honorary membership in the Association be extended to Russell B. Kingman, formerly a canner, active in Association work, and still deeply interested in the welfare and progress of the industry.

The Board discussed, but took no action with respect to a proposal to open its membership to canners of frozen products.

Dr. W. D. Bigelow reported to the Board the results of conferences on processes for non-acid food products, stating that the technologists participating in these conferences had arrived at unanimous agreement on recommendations with respect to time, temperature, and in some cases fill. Dr. Bigelow requested the Board's approval of the report prepared for the conference, so that this report might be published and made available to the entire canning industry. The Board voted this approval and following its vote, Dr. K. F. Meyer of the California State Board of Health addressed the Board briefly, stating that its action in approving the results of this conference was one of the greatest steps ever taken by the canning industry and that it should insure scientifically sound and commercially practicable methods of safeguarding canning products. A vote of thanks was extended by the Board to Dr. Meyer and to the other scientific workers participating in the conferences.

The Board approved application of canners of apple products to organize an apple section on the same basis as the other ten commodity sections of the Association.

It was recommended and the Board approved that the service to members in investigating claims for illness alleged to be due to canned foods, be extended to cover injuries as well.

President Cosgrove presented a report on the government agricultural relief program as it relates to the canning industry. The subject was generally discussed but no action was taken by the Board.

The President called attention to the criticisms of the Secretary's office which had refused, under previous instructions of the Board, to assign rooms in the headquarters hotel to non-members. This action was in accordance with resolutions which had been passed at previous meetings of the Board of Directors. After some discussion, the action of the Secretary was unanimously affirmed, and he was directed at future conventions to pursue the same policy.

Canning Machinery and Supplies Association

Wednesday Morning, January 22, 1930, 10:10 A. M.

THE session of the Canning Machinery and Supplies Association was called to order in the Tower Ballroom of the Stevens Hotel, Chicago, Ill., at 10.10 o'clock, January 22, 1930, by the President, Gordon H. Kellogg, of New York.

CHAIRMAN KELLOGG: I am going to ask the Secretary to call the roll, so we will be sure we have a quorum.

S. G. Gorsline, Assistant Secretary, then called the roll.

CHAIRMAN KELLOGG: There are 47 present and we have 14 proxies. It requires thirty-two or three for a quorum. I, therefore, announce the meeting in order.

We are not going to spend very much time this morning in talking about what the Association has done and what we are going to do. In the first place, I think we really are taking this Association a little seriously, gentlemen. About the only excuse we have for being is stated in our new by-laws, which were enacted and adopted down in Delaware in March of this last year. Those by-laws state that this Association is an Association to promote friendship and good feeling among the members, and to put on an educational exhibit once each year. Aside from that, I fail to see that we have very much else to do.

We sometimes think, when we are on the Board, and when we are interested in the Association work, that it is a very serious proposition; but to tell you the truth it isn't. Let's not be too serious this morning.

During the past two years we have endeavored to get a set of by-laws that we believed to be legal, so as to make everything we did in order. We obtained the best counsel we could, and with the assistance of some of our own members who were very much interested and thought we were not traveling along the right road, we got ourselves into shape so we know something about what we are doing and what we ought to do. To tell you the truth, that is about all your officers have been able to do for you in the course of the last couple of years, beside distribute rooms and try and give you insufficient space and keep you happy while you enjoyed it. (Laughter.)

I do want to apologize for my good nature in giving in to the National Canners Association in connection with the holding of these Association meetings three times in succession at Chicago. Personally, I feel that we are absolutely dependent upon the membership of the National Canners Association for our business, and when Mr. Gorrell, who holds office more or less continuously, as you know, intercedede on several occasions with the President of the Brokers' Association and myself to hold the meetings here in Chicago (because he said the canners did more business in Chicago last year and the year before than they had ever done before) there was not very much for me to do except to agree.

I knew we would have a great deal of opposition within our own membership, but after all I still believe we cannot hope to be happy and successful unless our canning friends are happy and successful; so if you have been put to inconvenience and you thought Bill got more space than he should have gotten, and you got less space than you should have gotten, remember it simply could not be helped if we came to Chicago and thereby made our canning friends happy.

The American Can Company, whom I represent when I am earning a living, had plenty of space on the ball room floor, and perhaps you have sometimes thought we had too much space even there, but don't forget we have not shown a machine in the three years we have been here, because I did not feel we could consistently ask for space and put on an exhibit on the machinery floor, thereby depriving some of you of much-needed space.

I want to say, personally, I have not done very much as President of your Association. John Hanna has worked very hard; he has been sick part of the time, and his responsibilities have weighed pretty heavily on him, so I have asked Sam Gorsline to help John out, and he has done a good job. He has worked his head off in getting these rooms for you in a fair and equitable way, and he has done a good job in taking care of your space; whether you thought so at the time or not, it was a good job. I think you ought to express your appreciation to Sam Gorsline because it meant extra hard work for him.

Another thing I do want to say is we have not played favorites in connection with the distribution of rooms to canners at the Stevens Hotel.

GORDON H. KELLOGG
Retiring President

Mr. Gorrell has felt that one of the things that helped his membership was the distribution of rooms at the central hotel of the Convention. He thought it was absolutely unfair to give rooms to non-members of the National Canners Association. The day has gone by when the can companies, my own included, my friends of the Continental and the Metal Package Company, are able to get a few extra rooms and distribute them among their canning friends, which probably helped some (incidentally, the rest of you all did that same thing). This year there has been absolutely none of that, and I believe the National Canners Association appreciates it.

Now I have said a lot more than I intended, because I know you want to get back to your exhibits, but I was really stalling a bit until our good friend, Ward Cosgrove, the President of the National Canners Association, could get in. He has something to say to you, I know, that you would like to hear.

I did not want you to get started in any arguments, because I know Ward is for peace and harmony, and I want him to know that there is nothing but peace and harmony here. I have gotten to know Ward Cosgrove much better this year than ever before. I know what he is doing in a business way, and I have the greatest admiration for him, both as a business man and as the President of the National Canners Association, and it gives me great pleasure to present him to you gentlemen.

COSGROVE BRINGS GREETINGS

By E. B. COSGROVE, *President, National Canners Association.*

YOUR amiable President, Gordon Kellog,, is responsible for this hardship. I say amiable, and I mean amiable. The personnel of a business reflects the personality of the dominating officer. In an association of your sort the officers reflect the composite personality of the association. Therefore, I recognize your Association as essentially amiable. The National Canners Association realizes the reluctance with which you men returned to Chicago this year, and appreciates friendliness, the sincere constructive helpfulness of your compliance. We trust that the business closed this week will justify your decision. You know we all have neighbors and neighbors. You fellows are the kind of neighbors we like a lot.

But you are more than neighbors to us. You are an essential part of us. Few canners have the facilities for manufacturing canning machinery. Improvements in machinery must be your contribution. We can devise ingenious ways to use, to better advantage, existing equipment; but new equipment, new seed varieties, must come from you. Southern-grown refrigerated vegetables are an ever-increasing part of the retail grocers' sales. To effectively check this development, canned foods must be constantly improved.

I can talk to you only in the language of a corn and pea packer. Our present blanchers must be supplanted. Our corn cutters are far from efficient machines. Much work must be done to ferret out non-corrosive metals for corn machinery. Real work has been done on seed varieties, but much remains to be done. The retort room and warehouse of the average canner of non-acid vegetables is a bedlam of inefficiency.

There is no room for complacency on our part nor yours. Science has demonstrated that canned foods are at least as healthful and nutritious as the same vegetables picked fresh from the garden and cooked on the housewife's kitchen stove. Our problem is to make them more attractive, appetizing, delightful.

The canned food of tomorrow must be more than a good food —it must be a work of art, supreme culinary art.

Both you artists and we artists have a lot of work in store.

CHAIRMAN KELLOGG: In the meantime, I am going to take the liberty given me by the by-laws of this constitution, in which I have at present some faith, and appoint a nominating committee. I am going to appoint three past presidents of the Association: Mr. Ernest E. Finch, Mr. Bob Sindall and Mr. Charles P. Guelph. Will the Secretary read the minutes of the previous meeting?

MR. RALPH COVER: I think there should be one slight amendment. The meeting is in regular order, so far as I can see, but it fails to state in the by-laws the form of the proxies, and in view of the possibility that proxies might be lost or something like that, I am going to suggest that the minutes, as they are there, have incorporated in same that the proxies are in the form attached to those minutes, and then attach to it three printed forms covering both individuals, partnerships and corporations. That makes it so you can see that the proxy is right, and that the meeting is right, and that sort of thing; in other words, there is a possibility of these proxies being lost, and if there should ever be any controversy over the validity of the thing, the minutes itself should show the regularity so far as they should show it.

I am going to suggest there be incorporated: "These proxies were executed without alteration or amendment." That would also make it conclusive on its face as to what really happened at that meeting.

I am also going to suggest in the enumeration of membership it be specified which are individuals, which are partnerships and which are corporations. That will make that meeting just as regular as it is possible to make a meeting under the circumstance, and, rightly or wrongly, it will make the record clear, and I cannot see a single objection to it.

I am therefore going to move that the reading of the minutes be dispensed with, but that those words be added, covering our execution of the proxies without alteration or amendment, covering the addition or character of proxies supplied by each member, and attaching to the minutes a form of each of the proxies.

CHAIRMAN KELLOGG: Do I hear a second to the motion? The motion was seconded by Mr. Cooling.

CHAIRMAN KELLOGG: You will pardon a word from the Chair. I think that suggestion is very much in order, and is a happy thought on the part of Mr. Ralph Cover, who made the motion. Are there any remarks? If not, all in favor manifest by saying aye. Opposed, no. The motion is carried.

MR. RALPH COVER: One more thing and I think I am through for the day. It will not take long to say that. One of the by-laws in that list of by-laws to me was rather iniquitous, and I want to say in the beginning I think the heart of everyone who was responsible for those by-laws was in the right place, and I do not think they had in mind the abuse of the by-laws when they did put it there; but, nevertheless, it seems to me we should provide for the contingency if these were abused so that rights might be taken care of.

I refer to the by-law which makes most of us subject to suspension or expulsion for cause expressed in the by-laws; for instance, if you have a pint of liquor in your room you could be kicked out of the Association by eight men. I do not approve of the by-law, even though I do not believe it will ever be abused.

Now I am going to make the statement that I am going to make in the preservation of whatever rights there are. I am not making any motion. I am making a statement as a member of this Association in as good standing as a member can be under the circumstances. (Laughter.) And that is this: I am going to state that the United Company, as a member of this Association, so far as one can be a member under the circumstances, reserves the right at any time to object to the validity of the organization and the acts of the officers and directors of this Association under that organization, because this Association is not organized in conformity with the law and for the other reasons stated in the minutes of the meeting held in Delaware.

Now we are not going to have any argument on it. I do not expect that to ever mean anything, but I do expect that if there ever was an abuse of power I think some one should preserve his right to at least upset the works without having prejudiced the case by having participated in a meeting which he believes not to be held in conformity with the law. And, therefore, it is not controversial; it has back of it no implication; it is merely preserving such rights as do exist or might exist in the event that there is an abuse. That is not admitting the legality of the thing.

CHAIRMAN KELLOGG: I think personally Mr. Cover does not have to reserve any rights to object; I think he has always kept those rights, and he probably will as long as he lives, and I admire him for it. He is a good friend of mine, and if he wants this on the record so that Tuc-Husker (and I am going to mention the item in which he is most deeply interested) may object at any time, he alone, if necessary, may have that privilege.

We will now listen to the report of the Treasurer, Mr. Thomas A. Scott.

TREASURER'S REPORT

MR. THOMAS A. SCOTT (Treasurer): The report is rather brief, but the standing of the Association is in very good condition financially. We have invested in Government bonds drawing 6 per cent the amount of $38,000; we have invested in certificate of deposit of the First National Bank of Cadiz $5,000, drawing 3 per cent interest. We have a checking account in the First National Bank of Cadiz which will be drawn upon to pay the expenses of the present exhibit, and the amount of the account in the bank is $14,432.54.

I have in my safe at Columbus the receipt from the Citizens Trust and Savings Bank of Columbus that is holding the bonds. I am waiting for a resolution of the Board of Directors stating to whom I shall turn this receipt over. I am holding in my hand a receipt of the First National Bank of Cadiz that there is $14,432.54 cents on deposit at that bank awaiting disposition of it. (Applause.)

CHAIRMAN KELLOGG: Before I entertain a motion for the acceptance of the report of the Treasurer, may I be permitted to state that Mr. Hanna says that the money in the bank in which he has some interest, the National Bank of Cadiz, Ohio, is drawing 4 per cent, and not 3 per cent interest.

I will now entertain a motion to accept the report of the Treasurer.

A motion was made by Millar Sells and seconded by Fred Taylor, to accept the report of the Treasurer. The motion was carried.

MR. THOMAS A. SCOTT: You will pardon my stating 3 per cent, but it was based on the fact that 3 per cent is the amount I get on my deposits, and that is the reason I stated 3 per cent.

MR. HANNA (Secretary): You do not have your money in the right bank.

CHAIRMAN KELLOGG: We will listen to a report of the Secretary.

JOHN A. HANNA (Secretary, Cadiz, Ohio): I do not know that I have any report to make, other than with regard to your membership. Last year we had 162 members, but owing to some of the mergers we have had that number has been reduced now to 156.

I wish to thank you all for your support and your kindness to me during the year and during our work here, and also wish to acknowledge the great help that Mr. Gorsline has been to me during this week.

I hope you are all measurably well satisfied with what we have been able to do for you. We have tried to do the best we could for you. We have probably made some mistakes. If we did not make any mistakes we would not do anything, so I think we have done as well as we could. Some of you feel that you have not been treated justly, there is no doubt about that; but perhaps another year somebody may fix that all right for you.

I thank you again for your support. (Applause.)

CHAIRMAN KELLOGG: May I supplement my report by saying at one of the last directors' meetings it was suggested that we attempt to limit, because of mergers, the right of any one corporation to a single vote. That resolution was not submitted to the membership, because after some consideration we thought we would like to have a happy and peaceful and harmonious meeting today. And really it did not matter very much.

One other thing I wish to add to my report is that Mr. Carr, one of your directors, suggested some time ago that there was a serious possibility that we might be subjected to back income taxes on the surplus funds which are with the Machinery and Supplies Association, and we therefore did take some advice on the matter, and through the interest and work of Mr. Ryder, your Vice-President, we obtained from the Commissioner of Internal Revenue a ruling that: "Since we were a non-profit-making corporation, we would not be required to file returns for 1928 and prior years. Future returns will not be required so long as there is no change in the purposes and methods of doing business."

I thought that might be of interest to you when you thought of the very handsome surplus which the Association has on hand. Is there any new business to come before this annual meeting?

MR. S. M. RYDER: Wouldn't you deem it wise, as outlined by the members present, to explain that automobile gift situation?

CHAIRMAN KELLOGG: Mr. Frank Chapman is the chairman of the committee in charge of the automobiles, and I am going to ask Mr. Carl Cooling, Chairman of the Dance Committee, to make a report on the activities of his committee.

THE AUTO COMMITTEE

MR. FRANK CHAPMAN: I have one request to make on the automobiles. This year we have asked identification on the ticket and some one to indentify the individual person. Heretofore it has been a matter of guesses for identification. I would request that you have as many of the company as you can at the drawing, so as to give personal identification at the drawing. I do not know of anything into which we can get that would cause more trouble than at the drawing for the automobile, without identification.

The cars are going to cost us a little over $2,300, about what we paid for one car last year. They will be given to the tenth and twentieth numbers. The first or tenth number will have the choice of either of the two cars within five minutes. The other or twentieth number winning will have to take what is left.

Heretofore we have had the Presidents of the three Associations act as judges. I was just talking to Ward Cosgrove, and he stated he could not be there, so we will have to get one more judge.

The cars are here, and you can see what the cars are yourself. So far we have had a very clever girl working on selling the tickets, and have no complaints.

CHAIRMAN KELLOGG: Mr. Cooling, may we have a report from your committee?

MR. COOLING: I will say I have both a beautiful and clever girl selling tickets.

It looks as though we are going to have a real party down there tonight. Up to last night they sold 564 tickets. They are putting on a show I think we will all enjoy. It consists of three complete units from three of the largest theaters in Chicago, the Chicago, Wabash and State-Lake. They have an orchestra coming directly from the Chicago Theater, and the rooms will be prettily decorated. It looks as if it were going to be a complete sell-out. We want to fill that room if it is possible to do it. I think you are going to miss a good party if you do not come tonight. We have possibly one hundred more seats left.

CHAIRMAN KELLOGG: Mr. Taylor has a suggestion which he would like to make, if you will excuse us for just a moment, Mr. Johnson.

MR. TAYLOR: It is not in the form of a suggestion at all. It occurred to me an expression of opinion of the members might be worth while, as to the wisdom of continuing to give away automobiles as we have in recent years. I do not know what the membership thinks of the practice. It looks like a bribe in some respects. I just asked Mr. Kellogg if this was not the proper place to get an expression of the membership at large.

CHAIRMAN KELLOGG: Perhaps a bit later we can have a motion to that effect and see how you do feel about it. We have given these automobiles away for three years, and it is quite an expensive proposition, and if it is not doing what we think it ought to do there is no use in continuing the expense.

JOHN A. HANNA
Secretary, Canning Machinery and Supplies Association.

Gentlemen, I notice the President of the Brokers Association has just come into the room, Mr. Willis Johnson. It has been a pleasure for me to know Mr. Johnson as I have learned to know him the last year, and as it was to know Abe Lincoln and Lyman Wing, Harry Fulkner and the other Presidents of the Brokers Association. We do not come as closely in contact with the brokers as we perhaps should, and we therefore do not appreciate what they are; so I approached Mr. Johnson and asked him to come up and say a little something to us so you can learn to know him as I have learned to know him.

Mr. Johnson, we take great plesure in welcoming you here.

PRESIDENT JOHNSON FOR THE BROKERS

MR. WILLIS JOHNSON (President, Brokers Association): Out of the hard job I had this year I was repaid in one way, and that was in knowing Gordon Kellogg. I tell you right now I sort of hate to get out and miss some of these fellows.

Very few of the members of the National Food Brokers Association have the pleasure or opportunity of actually transacting business with the members of your Association, for, though they both are very vital factors in that greatest of all activities, the food industry, their functions lie far apart; yours to furnish the seeds, cans, labels and machinery to carry the product to the world, and the broker's function to make sure that it is adequately and efficiently distributed to the consumer.

But you have done much to make this job of distribution a pleasant one by giving us cans and labels that help us sell the goods. To your Association goes a large part of the credit for this popularity of the canned article, for in no line has there been greater progress made than in your own machinery and supplies.

It must be very interesting to go back to the early days of can manufacture and follow it through to the present stage of modernized method. Such amazing progress can only be ex-

plained by the fact that careful thought and untiring efforts have been constantly put to work, each new demand met with a new venture. It has taken wisdom and vision and endless work, but you have achieved an almost unbelievable perfection. Now all that is necessary for a canner to do is to buy his product carefully, and you canning and machinery men finish the job for him. You furnish the cans, the machines that fill and seal them properly, machines to label them, machines that place them in cases and nail them up, even machines that carry the cases to the cars, and all done with the greatest possible elimination of waste at every step. This waste in industry is at present one of our nation's greatest evils, and one that is being carefully studied with a view to future curtailment.

The Hoover committee in 1921 defined waste as "that part of time, material and energy represented in the difference between the best known performance on the one hand and the average performance on the other." So it is obviously wasteful not to drop old methods and adopt new ones after they have been tested and proved better and more effective.

You will find that the size standardizing of your container will mean a big step in reducing waste, in cutting cost and in realizing a better profit. The United States Bureau of Standards is co-operating in this simplification of tin cans with a committee of the National Canners and with the assistance of the National Wholesale Grocers Association, so there is no doubt that in the near future we will have a recommendation for a uniform standardized, universal size and shape for all containers.

To you machinery and supply men is due the feeling of confidence and safety that the American housewife feels in canned foods, you have done your task so well that she has finally and definitely dismissed from her mind the old bugbear of ptomains, and now demands the canned article in preference to the fresh, for she has found that for cleanliness and sanitary conditions there is everything to be said for the can and very little in favor of the so-called green stuff picked off the counter.

We want you to feel that our Association is closely allied with yours, and, although you do not have the same personal touch that we do with the canners, we do like to feel that we are assisting in the wonderful success that members of your Association have made.

It is a great pleasure to have been with you today, and our Association wishes you a most prosperous and happy 1930. (Applause.)

CHAIRMAN KELLOGG: While we are waiting for the report of the Nominating Committee, which seems to be having some difficulty, I am going to say something in a serious vein for just a minute.

I honestly believe we are in for as good a year this year as the canned foods business has ever had, if one mistake is not made. I do not think we realize how much influence we have with the canners of this country. We are going around among them all the time. Some of the canners are isolated one from the other; they do not keep quite as closely in touch with the market as they would like, and possibly a few do not see the general situation as clearly as we in the Canning Machinery and Supplies Association are in position to do.

As I said before, we do not function very much except in a friendly sort of way, except in our annual meeting and exhibition each year; but we could do a great deal more than we do, I think, for our canning friends. If there is going to be any trouble at the end of 1930 it will be because we have been so interested in selling our equipment and our cans and our labels and seeds that we have made the canner feel that he could not pack too many goods.

We are not in this game, any of us, for just the year 1930 or 1931. We are in this business to supply equipment and supplies for a long, long time to come. Over the past years, with which you gentlemen are as familiar as I, there have been peaks and valleys in the prosperity of the canning business, due pretty largely to what the good Lord did for the canners in the way of weather and crops, and what the canners did for themselves, in being a little bit over optimistic.

Now, if we could talk to our canning friends—and I mean this seriously—I am not killing time now because I firmly believe this—if we could talk to these canners, and help them to pack a little better quality, and use a little more judgment and care in what they put out in cans; think a little more of what the consumer expects to get in those cans, I believe the industry can go through this year and have a very prosperous year as well as during the next year and the years to come, which brings me to the climax of my speech, because the Nominating Committee has come in.

I am going to ask Mr. Ernest Finch as Chairman of the Nominating Committee to make their suggestions for future officers.

THE ELECTION

MR. ERNEST FINCH: If you have ever worked with two stubborn guys, you will know what this proposition was. Your Committee has the following nominations to offer:

President—Mr. S. M. Ryder.

Vice-President—Mr. Arthur Clark.

Directors—Mr. C. F. Bowen and Mr. Howard Turner.

CHAIRMAN KELLOGG: You have heard the recommendations of your Nominating Committee. What is your pleasure?

MR. SELLS: Chairman Kellogg, I have had the privilege of knowing the gentlemen that the Nominating Committee have selected to head this Association as their choice, for quite a number of years. It is rather unnecessary to go into any great length in trying to tell men who are as eminently familiar with his work as all here are, of the ability, capacity, reputation and character of Mr. Rider, but it is a great pleasure and a privilege to second the nomination of Mr. Rider as President for the ensuing year.

MR. ARTHUR CLARK: I do not think I should rise to support my own nomination. I want rather to make clear the method by which my name is included in the roster there before you. You appointed on your Nominating Committee two gentlemen whom Ernest Finch says were difficult to deal with; in my estimation the entire Committee is difficult to deal with, when a man expects to use that exit and they prevent it by taking his papers and grip and by sheer force drive you back into the meeting.

I want to make it perfectly clear I am in no position to take an office that involves the devotion of any great amount of time. I have served as director of the organization and Chairman of the Membership Committee, and have been perfectly willing in times in the past to do all I could and I shall be willing to do all I can in the future, but I MUST make clear I am not out for office, and I permitted my name to go before you for this time, under stress and duress.

MR. CHARLES P. GUELF: A few years back Mr. Clark insisted upon nominating me to office and in the meantime he has taken a large amount of the business away from me; that is the reason I am trying to get him back into office.

MR. ERNEST FINCH: I would like to second the nomination for Mr. Clark. At one time he made a nominating speech in my favor which was very flowery, and in duty bound I would make a very flowery speech, but he has already seconded his own nomination.

MR. RALPH COVER: Mr. Clark has raised a point which I think is perfectly splendid to be raised at this time, and that is during the next year serious consideration should be given to some plan or other that would take a lot of the duties and work away from the Presidency of this Association. I have been with some of the presidents from time to time, and I know they have to neglect their business or turn it over to some one else to handle.

Therefore, I move that the report of the Nominating Committee be accepted, and that the Secretary be directed to cast one unanimous ballot for the two officers and two directors nominated by the Nominating Committee.

I also want to mention that those same people, if and when elected, should consider some plan that would make our organization one that the Presidency and the Vice-Presidency do not cause such a sacrifice and becomes more of a labor of love.

Mr. Charles P. Guelf asks for the floor.

CHAIRMAN KELLOGG: Is there a second to that motion?

F. G. ENGLEHART: I second the motion.

CHAIRMAN KELLOGG: I wish to ask, before this motion is put—are there any other nominations?

Mr. Buckholtz asks for the floor.

MR. RALPH COVER: I rise to a point of order. You have a motion on the floor, and it is properly seconded.

MR. BUCKHOLTZ: We have been running away on the Vice-President, and Directors, and there is a motion before the house that we nominate a President. Am I right or wrong?

CHAIRMAN KELLOGG: I have heard no suggestions of other nominations from the floor. I heard Mr. Cover's motion, and asked for a second.

MR. F. C. ENGLEHART: I seconded Mr. Cover's motion.

CHAIRMAN KELLOGG: I have given you a chance to make additional nominations from the floor and you did not take it.

All in favor of the motion that the Secretary be instructed to cast one unanimous ballot for the two officers and two directors nominated by the Nominating Committee, will signify by saying "Aye." Those opposed "No." The motion is carried.

Mr. Secretary, will you cast the ballot?

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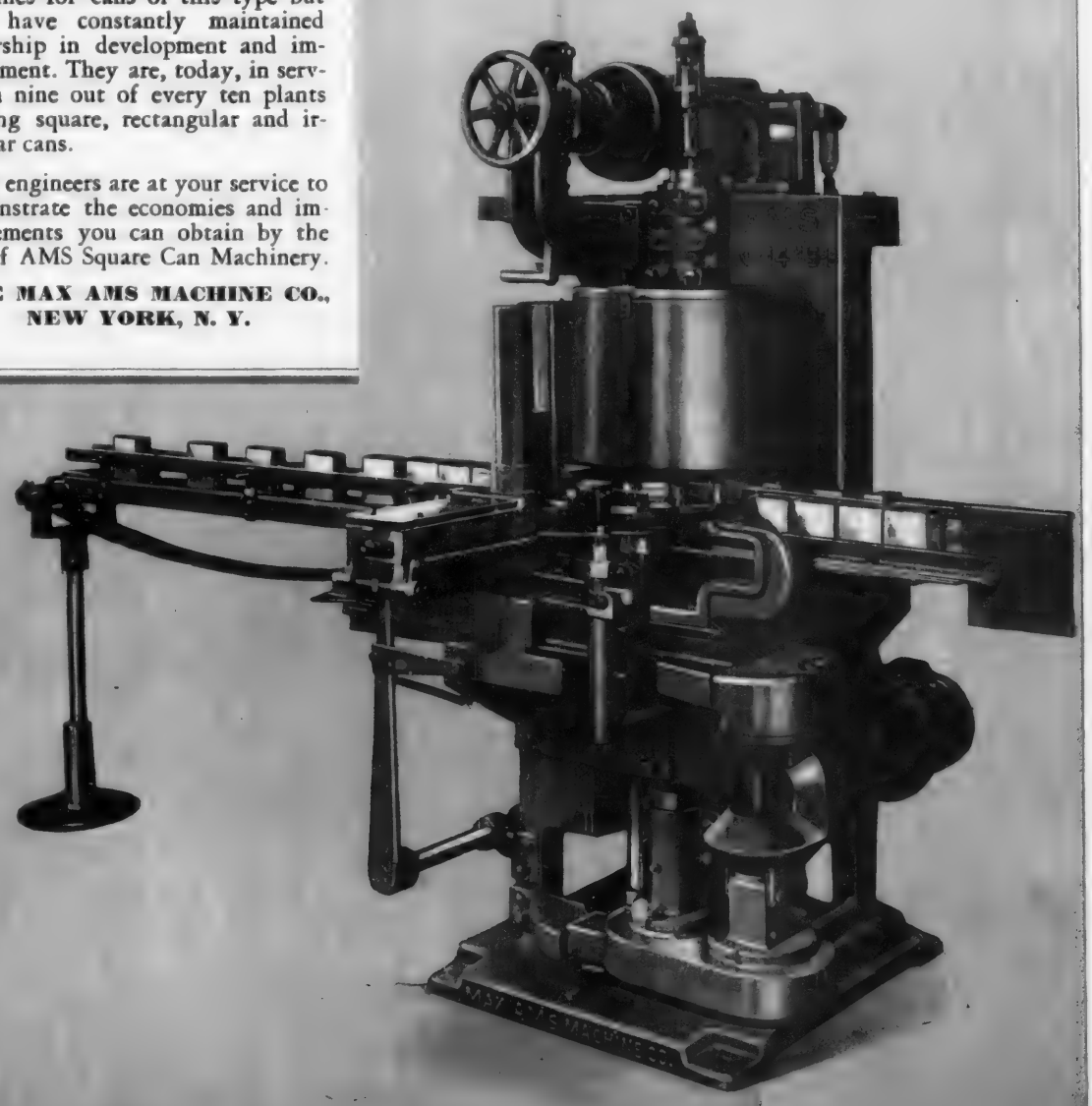

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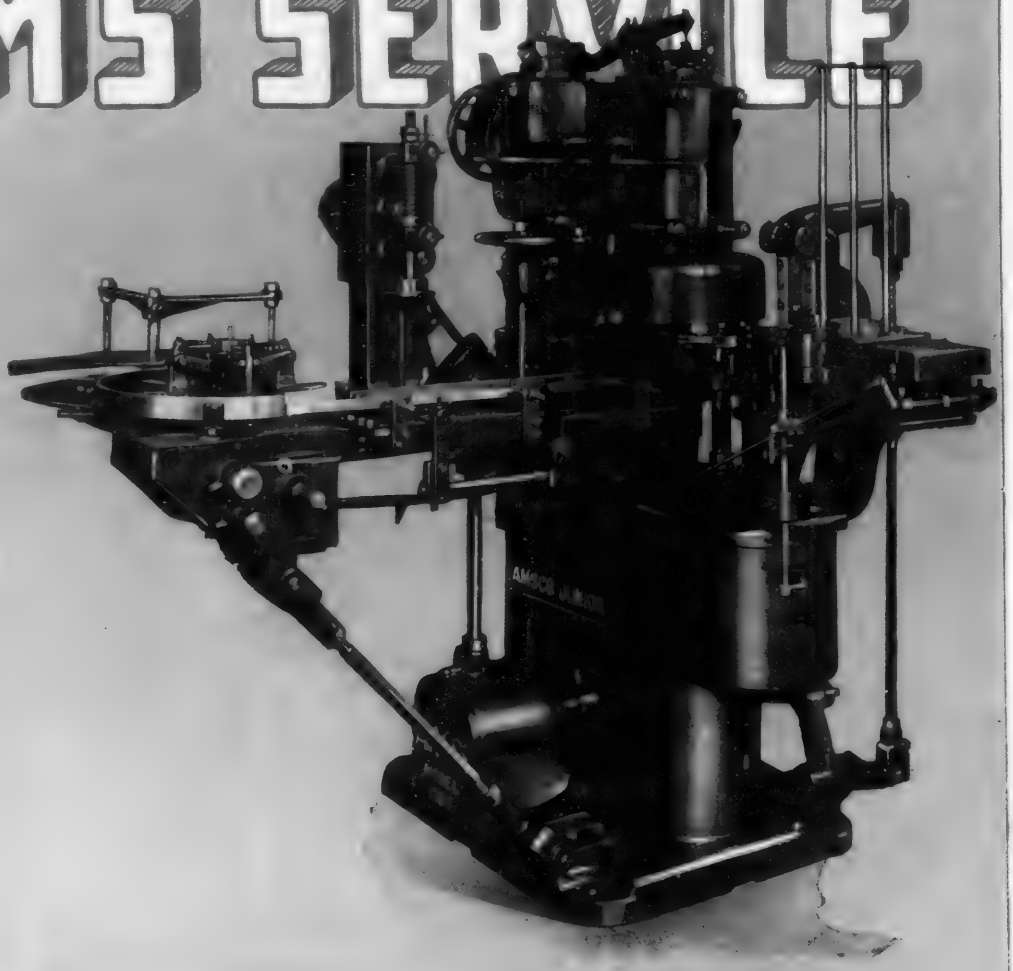

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SECRETARY HANNA: I hereby cast the one unanimous ballot for Mr. Rider, Mr. Clark, Mr. Bowen and Mr. Howard Turner, to fill the respective offices for which they were nominated.

CHAIRMAN KELLOGG: Mr. Rider, I welcome you to the office of President. (Applause.)

I have been associated a long time with Mr. Ryder, both as a Director and as a Vice-President, and as a dear friend.

Mr. Ryder perhaps has had more experience with matters pertaining to the Machinery and Supplies Association than any other man. You all know him, and he and you are fortunate in that he has reached the age and financial condition that will enable him to give a great deal of time to your Association affairs. I can assure you that you could not possibly have placed your trust in any one better fitted than Mr. Ryder. (Applause.)

MR. S. M. RYDER: Mr. Retiring President, and Members of the Association: Nineteen hundred three witnessed my first attendance at a meeting of this Association, and every meeting annually since then I have been present, thanks unto God. I have given some little time, some little thought, and have been most deeply interested in its workings. The eulogies coming from one to another, after the other has passed beyond are not not always altogether pleasant to me.

One of our poets said—The Autocrat at the Breakfast Table—"Your wake is nothing. Mind the coming track." And yet, when I went to sea, years ago, it was always my habit as my head came out of the companionway, and the wake of the ship steaming out of the stern came to view, to look at that wake and see if it had a straight path, for crooked steering oftentimes leads to direful results not alone upon the sea, but in ordinary life. My wake is more or less crooked, and what my future path may be, Heaven only knows—I don't. But in order to make it straight with your Association, I ask your co-operation.

This election of officers is the most harmonious election that I have witnessed in the more than score years in which I have taken part in the workings of this body, and I think that you have elected—casting aside its head—an admirable body of men. The Vice-President, particularly, has been acquainted with me to some extent, and I with him, for many years, and I know there can be nothing in the future but the most cordial, hearty and co-operative relations possible to come about; likewise with at least one of the new members of the Board. The other one I am not personally acquainted with, but I hope we will get more or less familiar.

I do not want to make a long talk. I do not intend to exhaust your patience, and yet there is one thought I wish to bring to your mind.

I listened to the report of the Treasurer, and I learned we have fifty seven thousand dollars in the treasury. To an organization of this kind, created for mutual admiration purposes and educational pursuits when we come into contact with our customers, the canners, we do not need to be educators ourselves—it seems to me that is a large sum of money to have in our treasury. Each year it is growing. That is admirable; probably it is desirable; but I may perhaps interrupt and in the near future cause to be sent to you a communication in which I shall ask you to express your individual opinion, in order that your opinion may be duly considered by your board of directors, as to just how we may use this fund to the advantage of us all.

We have been spending SOME money, particularly in the automobile gift. Some of us have expressed the view that we are not getting one hundred cents return for the dollar expended, and hence I think the board of directors and your officers should especially give a little thought as to how we might use some of that money more advantageously than perhaps we have used it. I do not feel competent alone to solve that problem, but I think we have reached the point of financial resource where we must consider how to expend it wisely and profitably.

Needless to say that your vote is especially gratifying to me, doubly so that as I announced to you when I entered the hall, one of our members accosted me and said, "I am not going to vote for you, because after strenuous labors on my part, and long argument, I sold three green bean snippers to one of my customers, and of course I could not get those machines elsewhere than from your concern, and now I come to you and you turn me down, and I have to disappoint my great and good friend, the canner. He can't get snippers."

The remark was made a little while ago in regard to mixing WITH and presenting TO the canner, an argument that he, himself, should take upon himself somewhat the burden of so allotting his own path that that bug-bear of over production, which has caused disaster in the past, might not be brought about; and to my great and good friend who said he would not vote for me, but I see he has, I want to tell him that that is one of the reasons why the concern which I am associated with has refused to grant more of that particularly machinery than in our judgment the future concern may want.

You all know as business men connected with the industry of manufacturing machinery, that when you have sold up to a certain limit, that your overhead and other expenses have been cared for and now further sales may bring about a profit. It is a great temptation to be able to go to the telephone as I can today, and place two hundred thousand dollars of cash orders within twenty-four hours—and yet I am not doing it for the reason I have given you. And I think Kellogg sounded a note that you may well take into consideration in your intercourse with canners when the subject comes up—be careful. Supply and demand has always governed profit, and supply and demand, notwithstanding legislative clap-trap, will always control that situation.

I could talk some time on that, and I am getting a little earnest. (Applause.)

S. M. RYDER
President, Canning Machinery and Supplies Association.

Official positions in this organization never bothered me, in all the years I have been associated with it, until recently. It is quite true that I have now reached the position where my time is my own, and I do not have to punch the clock; I have a most admirable organization of young men that without doubt if the old man wasn't there some of these improvements that the President of the Canning Machinery Association alluded to a moment ago would be adopted.

That is one of the things that I often wonder in the canning industry—why the canner does not take up more quickly the idea of junking obsolete machinery and putting in that which would more surely bring him a profit.

I am going to close by simply saying that I appreciate your vote. I hope that the future will not develop anything that may cause you to think it was an unwise decision on your part. I thank you. (Applause.)

PRESIDENT RYDER (Now Chairman): Mr. Clark, will you come to the front so that the membership may see just how nice a looking man you are?

And also, will the two newly elected Directors step up here in front? (Applause.)

Mr. Clark, I welcome you, and give you the opportunity of talking turkey to these gentlemen.

MR. ARTHUR B. CLARK: I have only this to say, Mr. Ryder: I am not unappreciative of the honor of the position but I MUST make clear the conditions on which I was finally ushered upstairs, and that is that I have assumed responsibilities in recent years that have loaded me pretty well up, and I have been renouncing positions of different natures in my own home section that I would have been very, very glad indeed to have taken on, but I did not feel I could take them, in justice to other things; so I do not take this present position with any implication to the future whatsoever; while I shall give what advice and consideration that I can, I can not promise to devote the time to it that I formerly did, and am simply doing it because I have interests in the Association and really at the behest of these three gentlemen that waylaid me at the door down stairs.

I hope, having accepted the position under these conditions, that the President will now see to it that they return to me my property and let me have my papers and portfolio which I believe justly belong to me. (Laughter.)

CHAIRMAN RYDER: Mr. Bowen.

MR. C. F. BOWEN: I thank you for the honor of having selected me as one of your Directors. It may be I was a little different than your Vice-President—I sought the nomination. Perhaps that was the reason the Committee was so stubborn and would not put me on.

I thank you and will be very glad to serve.

There was a suggestion made that our President not be burdened with so much work. I think there is indication from his speech that he wants more work than he has had before, so I do not know what the new Directors will do in that regard.

CHAIRMAN RYDER: Mr. Howard Turner.

MR. HOWARD TURNER: I am happy to have the opportunity of becoming more acquainted with Mr. Ryder, and I thank you gentlemen for your vote.

The organization with which I am connected has been a member of this Association ever since it was incorporated. I shall be very glad to do anything I can in the Association work. (Applause.)

CHAIRMAN RYDER: Is there anything further to come before the meeting?

MR. BUCKHOLTZ: In reference to our President, I think I voice the sentiment of every member here, that we have been very proud of our President the past two years. He has handled the office in a very able manner, and I wish to give him a rising vote of thanks.

CHAIRMAN RYDER: All in favor signify by rising.

Mr. Kellogg, it is up to you to acknowledge the honor which our membership has given you.

MR. GORDON KELLOGG: All I can say is, Gentlemen, I thank you very much for your vote of thanks—I am honored.

The motion was made, seconded and carried, to adjourn. The session adjourned at twelve fifty o'clock.

National Food Brokers Association

Tuesday Morning, January 21, 1930, 10:15 A. M:

President Willis W. Johnson, presiding.

THE Twenty-Seventh Annual Meeting of the National Food Brokers Association convened at 10.15 o'clock in the South Ball Room of The Stevens, Chicago, Illinois, President Willis W. Johnson, presiding.

PRESIDENT JOHNSON: I would like to have a motion to dispense with the roll-call, and also the reading of the minutes of our last meeting, as the minutes were all printed.

The motion was made, seconded, and carried.

PRESIDENT JOHNSON: The next thing on the program seems to be the submission of the report of the President.

PRESIDENT JOHNSON'S REPORT

YOU have often heard it said if you want to make the summer pass quickly, make a 90-day note; if you want to make a year pass quickly, be President of the National Food Brokers Association. This has been a very active year, and your officers have been working constantly with other Allied Associations to do all in their power to better conditions for each and every one of you.

My first official trip was to Louisville, February 25th and 26th. As you know, this was a fact finding survey carried on by the United States Department of Commerce for the purpose of aiding the Retail and Wholesale Grocer. The next day we were given a luncheon by the Louisville Brokers. Some 25 attended, some of whom were not members of our Association. This was a most interesting meeting. A meeting was called by the Federal Trade Commission to be held March 14th in New York to form the Executive Committee of the Grocery Trade Practice Conference—so our own Executive Committee which had met the day before, attended this.

On April 23rd, I addressed the Western Canners Association in Chicago, as your representative.

Next was the convention of the American Wholesale Grocers Association in Memphis on May 23rd, where I made a talk. In the afternoon we met with Memphis and visiting brokers.

After an Executive Committee meeting in Chicago on June 20th, our Secretary and I left for Portland to attend the Joint Convention of the National Association of Retail Grocers and National Wholesale Grocers Association, stopping off at Butte, Montana, on the invitation of the brokers there. In Portland we had luncheon with the brokers and later I spoke before the convention on "Our Mutual Interest and Responsibility."

At the 1929 convention in Chicago, the Pacific Canned Salmon Brokers Association had asked that a Committee from our Association be sent to Seattle to aid them in increasing their membership and getting more co-operation from the Salmon Industry, thereby eliminating such practices as were detrimental to the best interests of the Salmon Industry and also to members of the National Food Brokers Association. I mean by this, splitting brokerage with the buyer. We went to Seattle, met with the Pacific Canned Salmon Brokers Association and accompanied by their Committee, called on several influential packers and talked over conditions with them enlisting their support. We hope to see results.

While in Seattle our members of the local Brokers Association gave us a dinner.

Returning to Portland we met with Mr. Burns, Secretary of the Northwest Canners Association, before going on to San Francisco where we were entertained at luncheon by the brokers there, then on to Los Angeles, a luncheon there with the brokers. All of our meetings on the Coast were most enthusiastic and we were cordially welcomed everywhere. Secretary Fishback returned by way of Phoenix, Houston, Dallas and Oklahoma City, attending brokers' meetings in all those cities.

One sad mission we had this year, was to Indianapolis to attend the funeral of our treasurer, Robert H. Dietz, on August 6th.

August 7th in Chicago, we met with a Committee of the National Canners in regard to the McNary Labeling Bill.

October 12th, we held an Executive Committee meeting in Chicago.

November 7th, we went to Washington, where I addressed the Associated Grocery Manufacturers of America's convention, on the topic assigned me, "The Brokers Function in Distribution." The next day we were present at the Second Grocery Trade Conference and presented our statement. Mr. Hunt and Mr. Flannery of the Federal Trade Commission were at this meeting.

On December 29th, the Executive Committee met for final convention plans in Chicago, and January 10th I spoke before the Ozark Canners Association in Springfield, Missouri.

Beside these trips, Vice-President Orr went to the Wisconsin Canners meeting in Milwaukee and to Washington to the Hoover Conference. Secretary Fishback made a trip to Washington in May for the final meeting of the Location Committee to select the 1930 Convention City.

I want to thank them both for this and all the other help they have so willingly given the Association during my administration.

The past year has been extremely pleasant and interesting, made so by the hearty support given me by the members and by our splendid Executive and Advisory Committees. They have all stood by me to a man. Too much cannot be said for our able Secretary, Paul Fishback, he was always at our beck and call.

Personally, I believe the broker is in a stronger position today than ever before, because distribution and cheaper distribution is the economic world's greatest need. The most serious complaint which has come to my attention, is the brokers negligence in answer to their principal's wires, letters and circulars. Let's not grow careless in this matter, as it hurts the brokerage fraternity. We have such a wonderful organization, it stands high with all other branches of the Food Industry; and with all of us doing our part and living up to our own code of ethics, I can foresee only a rosy future for the National Food Brokers Association. (Applause.)

MR. JOSEPH KEEVERS: Mr. President, I am going to appeal to the Chair, and I want to offer a motion to the First Vice-President, Mr. Orr, that this report be accepted, and that we give President Johnson a rising vote of thanks for his splendid administration, and the unstinted zeal and unselfishness he has displayed in the giving of his time and efforts.

The motion was received by First Vice-President Orr, was seconded, and carried by a rising vote.

PRESIDENT JOHNSON: Thank you very much, gentlemen.

We have with us today Mr. Rowe, Secretary of the American Wholesale Grocers Association. I have had the pleasure of hearing Mr. Rowe many times during the past twelve months, and I know he has a message of interest for the brokers. We are mighty sorry Mr. McLaurin could not come along with Mr. Rowe, as we always feel it is no convention without Mr. McLaurin. I will ask that Mr. Rowe come forward and let us hear from him. (Applause.)

ADDRESS OF SECRETARY ROWE, AMERICAN WHOLESALE GROCERS ASSOCIATION

IN the circumstances that have just been mentioned by your Chairman, I am afforded the privilege of appearing before you this morning. In the past I have attended a number of your meetings and have been an interested listener and spectator at the proceedings, but this is the first time I have had the very great pleasure of addressing you, and in doing so I sense a warmth of welcome on your part, which is a product, no doubt, of the long years of pleasant association between our organizations, and a recognition of the mutuality of our interest and of the many problems that we have in common.

It seems to me that the relationship between the broker and the wholesale grocer is one that is especially close, compounded as it is in the elements of friendliness, of service, and of mutual respect and confidence. Intangible, most of these elements are, and for that reason the relationship is a sensitive one, easily upset and hard to restore, and all the more reason that both brokers and wholesale grocers should be diligently on the alert to see that it is kept inviolate.

Mr. Chairman, I have observed over a number of years that the relationships between brokers and wholesale grocers, and the brokers' principals, notably the canners, have, generally speaking, settled down into the grooves of satisfaction and the paths of peace. I remember that four or five years ago there was on my desk at one time thirty complaints from wholesale grocers regarding too short pro rata deliveries and grades not up to specification. Those complaints and a stream of similar ones all that season constituted a most harassing and difficult problem, and many of the complaints found no satisfactory outcome, but during the past twelve months I do not believe there have come to us more than ten or twelve such complaints, and the close of the year has found all of them satisfactorily adjusted with the exception of two, and those are of minor consequence. Two of this total number were settled by arbitration, and the rest by friendly negotiation conducted by our office with the wholesale grocers, the brokers and the principals.

It has been my experience, too, that although a broker, particularly a member of your organization, rightfully represents his principal, he distinctly does not represent the shortcomings and derelictions of his principal, and it has been my experience, too, that when a food manufacturer goes to the bad on a wholesale grocer in a majority of cases he has already gone bad on his broker. I believe that this settling down process of this relationship between wholesale grocers and brokers has grown out of a surer realization on the part of each of these bodies that it must not put over on each other anything that is unfair.

In the two arbitrations I have spoken of, in each case the arbitartors consisted of one wholesale grocer and two brokers, and in each case the judgment was in favor of the wholesale grocer, not to the extent the wholesale grocer felt justified, but to the extent that common fairness warranted it.

I believe, too, this smoother course of transaction between wholesale grocer and broker is due also to the increasing importance that brokers have placed on service, and undoubtedly a larger preparation for this service, more untiring efforts and activity to improve and make it effective, will still further result in perfecting the broker's function and safeguarding it as one of the desirable and indispensable performances in orderly and satisfactory distribution.

I know that some wholesale grocers put forth no more effort than seems to be absolutely necessary to skid along on every-day routine, and what they fatuously call the system and policy of their business. The result is they make no effort to improve and enlarge their service to the retail grocers, their customers, or to the manufacturers from whom they buy, with the resulting detriment to all three.

At the National Business Survey Conference held in Washington at the suggestion of President Hoover, and called by the United States Chamber of Commerce for the purpose of mopping up the debris left by the stock market crash, the President on that occasion ended his address with some such words as these, "I do not care to preach, but I would like to mention that good old word 'Work.'" Whether or not that word be old-fashioned, I know that on that occasion it came into a newer appreciation and a newer resolve on the part of those present to make better use of it than ever before.

Mr. Chairman, in my own experience, I have tried many and oftentimes curious and bizarre substitutes for work, but I have never found any of them satisfactory. I am therefore very much impressed with the story of a college graduate who went to a hard-boiled business man and asked how to succeed in the business world. The business man looked at the college youth for a moment, and said, "Son, the way for you to start is to trade in your wrist watch for a Big Ben alarm clock." (Laughter.)

Mr. Chairman, I do not know that I can offer any more fruitful suggestion than for wholesale grocers and brokers to shake

WILLIS W. JOHNSON
Retiring President, National Brokers Association.

off many of these new-fanglements of this labor-shirking age, and fall in step with the chimes of Big Ben and get back to old-fashioned, real work, in such a manner as it will seem a new style, for even with the rapid advancement of this mechanical age we cannot do everything yet by machinery and charts and by the push of a button.

Gentlemen, the wholesale grocer on his part at the present time is suffering from two things; one is discriminatory prices on the part of some manufacturers, and the other is his own disinclination in many cases to modernize his service and that of his retail customers. The first is somebody else's fault and the second is his own. Our organization is attempting to combat these two things, not neglecting the one for the other. There seems to be little sense in telling the wholesale grocer his salvation is a more effective service on his part, and a cleaner and more attractive store and a better systematized store on the part of his retail customers, when through those two services must pass goods bearing a discriminatory price, putting a handicap on the wholesaler and his customer a differential that it is impossible to overcome either by the best of salesmanship or by the most ultra of modern equipment, appliances and methods. Unless he can start out even in the matter of price, all these things will avail him naught. He is some times told to apply the remedy of statistics and economic charts, and even though he does take these things in liberal doses, before meals or after meals, or applies them externally, his business will still be sick, even in the most modern warehouse and in the most perfectly operated system, and the business of his retail customers will also be sick in the cleanest and most modern of stores, if the goods they handle bear the blight of discriminatory prices. And yet, my friends, when we undertake to combat this situation we discover some wholesale grocers who want to find their salvation in our stopping somebody else from doing something. They expect us to snap a switch on legislation, or some other vague

formula, and make everything right and prosperous for them. On the other hand, there are many wholesale grocers—and I am glad to say their number is increasing—who have more than ever caught the spirit of real service, and depending more than ever on themselves and real service, than what somebody may do for or to them, for their success. As I have said, Mr. Chairman, we are attempting to combat both of these propositions in the interest of the wholesale grocer, recognizing the proper importance of each, and in our efforts we would like to ask of you brokers a sympathetic understanding and a full measure of co-operation.

Chairman Johnson, Mr. Lincoln, Wr. Wing and you other gentlemen, I suppose that you will all agree with me that in every group, no matter how carefully federated and how closely federated, there are always a few whom it is hard to keep on the reservation. They want to make short-cut paths across the grass, and to dig under or climb over. There is a tendency here and there on the fringes for some brokers to want to go into the wholesale grocery business, and for some wholesale grocers to take on the brokerage business. Gentlemen, I want to say that in the opinion of our organization such a procedure is ill-advised and disruptive. As I have attempted to illustrate, there is too much real work in both the wholesale grocery business and the brokerage business for the members of the two professions to want to merge into a disorderly rabble attempting to assume the functions one of the other. The services of these two businesses needs constant improvement; it requires constant adaptation to ever-changing needs of the times, and this cannot be accomplished by confusing boundaries or bemazing the domains of duty. In this connection, Mr. Chairman, I would like to read you two letters with the names omitted.

The first letter is from a wholesale grocer, addressed to our president, and the second, his reply.

"October 19, 1929.

"We are planning to open up a brokerage office here in —— in order that we might secure the brokerage on some of the commodites we buy. We have a young man who has been working for us for years who will take over this part of the work. He will have a separate office and presumably will be working for himself. Is there any condition or circumstance that would be a reason for our not doing this?"

"Won't you please write me under personal cover regarding same?"

"October 25, 1929.

"I acknowledge receipt of your letter of October 19. Reply to this has been delayed a day or two because of my absence from the office.

"You ask me to discuss this matter with you and, of course, I know in doing so you want me to speak freely, and give you the full benefit of my observations and consequent conclusions with reference to the plan suggested.

"I think your plan is a bad one; one in fact that is suicidal to the best interests of the jobbing trade. If the jobber in his legal right usurps the function of the broker then he must not find occasion to complain when the broker and his principal, the manufacturer, usurps the function of the jobber and goes direct to the retail trade. Knowing as I do the very fine spirit of fairness that actuates you in your business relationships, I am sure that your firm, acting both as wholesale grocers and brokers would not allow yourselves to become prejudiced against brokers who sell to retail trade direct; the two are one and the same. Necessarily when the wholesale grocer becomes a competitor of the broker he must be prepared for the antagonism of the brokerage fraternity—he could not expect less. I would advise you not to be misled into believing that your relationship as jobbers with this broker's office will not become known. No wholesale grocery house who has attempted this has been able to keep it a secret.

"You will, of course, understand Mr. ———— that I am not trying to advise your company how it should proceed with this matter, nor is this communication to be accepted as any criticism of your action beyond that of the general criticism to the effect that in establishing such a relationship the wholesale grocer immediately and definitely surrender any and all right to justly criticise any method of distribution—buying or selling—adopted by the merchandise food broker, the retailer grocer and the manufacturer."

Mr. Chairman, we have not the discipline over our members that your organization has. We have often envied you the corrective ability that you have, and which perhaps we can never attain, but we discourage and intend to discourage wherever we can the overlapping of the activities of these two trades. Whenever and wherever we can, we purpose to tell wholesale grocers to stick to their own knitting and not wander off and start crocheting any such grab-nets or floppy entanglements.

Mr. President, I thank you. (Applause.)

PRESIDENT JOHNSON: Mr. Rowe, we want to thank you very much. I think the boys want to give you a rising vote on that speech.

A rising vote of appreciation was given Mr. Rowe.

PRESIDENT JOHNSON: We come now to a gentleman who helps to make our tasks much easier. His Association has done a great deal for all the people in the United States. I have heard this gentleman talk many times in the past twelve months, and he always has a good message, and he knows how to say it. I take great pleasure in introducing to you Gordon H. Kellogg, President of the Canning Machinery and Supplies Association. (Applause.)

ADDRESS OF PRESIDENT KELLOGG, CANNING MACHINERY AND SUPPLIES ASSOCIATION

IN glancing over your conspicuously attractive souvenir program which came to my desk two or three days ago before I left for the convention, I was particularly impressed by the emphasis which you all placed upon your own conception of what your business in life was. Perhaps you have read that program as carefully as I have, but I am going to take the liberty of reading two or three of the slogans which appear on your business cards and advertisements.

"Sales Agents"—"servicing canners faithfully"—"energetic, ethical representation for reliable packers"—"a complete sales service to canners"—"sales service specialists"—"aggressive representation for manufacturers who desire business"—"efficient representation assured"—"sale makers."

In the early days of the industry before the National Food Brokers Association became what it is today, I think there was somewhat more than a suspicion that some brokers were dealers in merchandise and traders in futures and buyers' representatives—not salesmen altogether. I think that is pretty largely over.

You are going to be addressed this morning by the distinguished representatives and Presidents and others of the National Wholesale Grocers Association, and the American Wholesale Grocers Association, Chain Store Association, and others of that type, buyers all, and perhaps I will be the only one to speak about salesmanship. And so I am going to trespass upon your time and nature just a wee bit to talk about what I think is the proper sort of representation for the canners to enable you to deliver under your slogans and under your own statements of what you really are and what your conception of what your business in life is.

The canners of America are no longer—at least many of them, most of them—business men who are just groping in the wilderness of business, who feel their business in life is to take the fruits and vegetables supplied to them by their growers and pack them as quickly as possible, sell as many of their goods as possible before they are packed at whatever price the buyer is willing to pay for them. I think that has somewhat changed in the last few years, and it is for your betterment and theirs. They have become intelligent and far-sighted manufacturers, better financed and, in consequence better able to meet the changing conditions of modern business and modern merchandising, which means that those canners expect the buyer to carry smaller inventories, and they are meeting the conditions of better transportation, smaller sales at one time, quicker deliveries, and are expecting to carry larger inventories at the source of manufacture in order to meet these new conditions that now exist.

Today is a day of re-grouping, and mergers, of broadening out, and yet of specialization too, and your principals of today may have entirely different representation tomorrow because of this re-grouping, but the business is going on just the same, and you are going to get other principals which you may represent, and as long as the quality of canned food improves as it has been improving the last few years, as long as different canned foods are packed, and as long as the retailer, whether he is a chain store man or just a straight, independent retailer, correctly diagnoses what the consumer wants, and you gentlemen correctly report to the canner what the consumer and the housewife want, just so long will the canned food business improve and you receive the proper reward for your labor.

Perhaps too often in the past the flow of knowledge about canned food has been the other way, from the canner to the consumer. The canner has originated and experimented and tried and proven to himself the possibilities of the new, but the channel from the canner to the consumer has been blocked and hampered and clogged by prejudice, prejudice because the thing was new and untried, and as a result the housewife has had to put up with what she did not want, although perhaps she did not know what she did want.

Do we, as manufacturers' sales representatives—and we are all that—some times take the easier way? Do we some times

entertain our principals at golf and dinner and the theater when we might better be spending the same time or more time with the manufacturers—in your case, the canner—learning something about the art at first hand, the problems, and hopes, and aspirations, and the processing, and what is going into the canned food that we expect to sell? I was much interested in listening yesterday morning to a representative retailer who was pleading with the canners that they put on the labels of their cans the number of slices of pears that were in the can, and the number of ordinary portions of peas that might come out of the can, because he said he could not possibly develop his salesmen in his retail store to know how many pieces of pear there were, or how many portions of peas. A housewife comes in, and she is going to have a party, and she says, "How many pieces of pear are there in this can?" And nobody knows. I think that is something the canner could do, and you could help to educate him some. The retailer also said something that impressed me very much, and that was of the items which he sold forty per cent of them brought him no profit; the other sixty per cent, of which canned food was the chief, were the items which brought him the profit and made his business go on.

I wonder if we listen to the hopes and aspirations always of the canner with an open mind, and are our ears always to the ground to hear what the housewife only half expresses, because she only half knows, in her desire for canned food. And I wonder, too, if we believe that clear liquor, for instance, and no splits are the only controlling factors in determining the quality of peas; that creamy consistency is the only badge of aristocracy in corn; that fineness of shred, crispiness and whiteness are the reasons for recurrent consumer demand for kraut; that sweet potatoes must of necessity be soft, and discolored when they come in a can; that peas, lima beans and tomatoes, since they have always come out of spangled, mottled and darkened cans should not be packed in enamel cans because the buyer won't pay the cost and the housewife isn't interested. I wonder if we just too often feel that appearance is the thing that controls price and grade, and not quality and taste.

Do we know—I have heard prorata contracts mentioned this morning—do we all know prorata contracts for delivery are as much affected by the quality and the pedigree of the seed, the kind and amount of fertilizer used, as that delivery is affected by the weather and the seasons?

I wonder, too, if we advise our principals, as sales representatives, to accept the price that is offered, or whether we do go to our principals and take them into our confidence and get them to take us into theirs, and discuss the question of price with them in an endeavor to establish a definite sales policy, and then knowing the kind of food they are packing we can go out and with confidence ask a fair price, because we know that price is right?

I realize that perhaps the things I am talking about might lead you to think I believe in Utopia here on earth, but whatever is worth while in this world comes from a vision, plus a lot of hard work.

I notice on the program that the next speaker is Ward Cosgrove. Del Maiz Corn would be just another brand if Ward Cosgrove—and he is not here, and therefore I can speak frankly—had not had the vision, and the knowledge, and the confidence to advertise it and develop it and sell it. A housewife in New York would not yet have said to me, "Vacuum packed corn? Oh, yes, that is the kind I am buying now; that is the kind without any water. I never did like the other kind." And I have no brief against the other kind of corn, because I like it. But you never can tell until you try; some do, and some don't.

The success of your Association and of mine is bound up in the success of our principal, the canner. He is our friend, and because he is we can advise with him, and congratulate him when we may. In so doing, we help him produce better food, which you will help him to sell at a better price, and which the wholesaler and the chain store will pay because the consumer will be willing to buy it because she wants it, and the housewife is always willing to pay a fair price for what she wants.

Greater knowledge of our products, in my opinion, is the key to better and more orderly merchandising and increasing consumer demand. I think you and I both would agree there is prosperity ahead of us this year in the canned food business, and in the food business generally. If you and I are true to our ideals, as you have expressed them, it will be said of you at the end of the road, as you have said in this booklet of the founders of your Association—"They blazed the trail"—"brought co-operation out of chaos"—"they put fair dealing above prejudice, above wealth, and every hill and vale shall cherish their treasured name." (Applause.)

PRESIDENT JOHNSON: Thank you very much, Mr. Kellogg. I know all that are present will now agree that I didn't tell them wrong.

I am going to appoint the Nominating Committee, while I am on my feet, and I would like to make the Chairman of this committee Mr. A. B. Clark of Denver; Mr. Charles M. Britt of Asheville, North Carolina; Mr. Louis A. Captain of New York; Mr. Alex W. Adams of Los Angeles; and Mr. Henry Schlesinger of St. Louis. I would suggest that if the Chairman has anything to say, if he wants to meet immediately after this meeting, he let me know now.

MR. CLARK: We have arranged for 11.30, and I have gotten hold of every one but Mr. Adams. If he is in the room, I would like to have him get in touch with me.

WILBUR R. ORR, President
National Food Brokers Association

PRESIDENT JOHNSON: There is a gentleman who has just come in the room has done a great job for the National Canners this year. He has been one busy man. It is my pleasure to introduce to you now Mr. E. B. Cosgrove, President of the National Canners Association last year, and I will ask him to kindly come forward.

ADDRESS OF PRESIDENT COSGROVE, NATIONAL CANNERS ASSOCIATION

IT is a pleasure for me to be here this morning. I know that you feel as I do, that there is a real fundamental community of interest between your Association and the one I represent, that necessitates their continuing friendship and close co-operation. There can be no great or long-standing differences between the National Canners Association and the National Food Brokers Association. There can reasonably be, and undoubtedly will be, from time to time, disagreement as to how far each may go with propriety in supporting a program close to the heart of the other. There is not, however, if we both conduct ourselves with due propriety, any reason why it should ever be necessary for either of us actively to oppose any project originating with the other.

There may be a feeling close to the hearts of some of you men that our Association has been negligent in its support of, if not actually antagonistic to, your activities in connection with the Trade Practice Conference. I can assure you that we have not been antagonistic. We have felt simply that they were outside of the proper field of our activities as an Association. Neither as an Association nor as an industry can we write a brief for any form of distribution. We would be as far afield from our rights in so doing, as would you men be if, as an Association, you aggressively fought the development of frozen fruits and vegetables.

Obviously, an Association the size of ours and as varied in the character of its membership, cannot be accurately represented by an individual, whether that individual has or has not been delegated with that responsibility for a year. By the same token our Association itself cannot speak authoritatively for 100 per cent of the canning industry. At best, I can give you this morning my personal opinions plus a report on the general sentiment as I get it from contact with our various members.

As it has been well said, nothing in the universe is certain except the law of constant change. All human relations and all human activities are changing. These changes take the shape of, or are sometimes described as movements, tides, trends, fashions. Regardless of any conclusions we might reach after solemn conference here today, the present trend in merchandising in the United States will run its course. It would be as fruitless for us to attempt to interrupt that economic tide as it would be to attempt to stop the ebb and flow of the Pacific. If we are going to survive, we must learn to accommodate ourselves to the tide rather than wear ourselves out in uselessly combatting it. You men are, without any question, concerned over the present trend in distribution. There is a question in your minds as to how significantly it may touch your own business. Time and again we are asked, "What is to be the place of the food broker if the present tendency toward consolidation continues?"

Within our experience we have seen certain types of distributors bitterly oppose the development of chain store distribution. We have seen the small independent chain at quarrel with the national chains. We see now an opposition among independent retailers to the voluntary chain, and a dread on the part of the independent wholesaler of the grouping of wholesalers collectively as in the I. G. A. and Red and White movements. Our own industry is as intimately bound up with and subject to effect from these changes in distribution as is your own.

In contemplating our problems in connection with this distribution consolidation, I am reminded of the Honorable Sam McKelvie's duck story. Almost any canner can appreciate this, and I fancy some of you brokers will be able to apply it. Sam Johnson, a colored cotton planter of Mississippi, came into the country bank, and asked for credit.

"Why, Sam," said the banker, "haven't you just sold your cotton?"

"Yes, suh," was the answer, "but de ducks got it all."

"The ducks got it all?"

"Yes, suh. I shipped it up to Memphis and dey deducks for freight, deducks for hauling, deducks for storage, deducks for insurance, and deducks for commission. De ducks jus' nachully et up all da cotton. Dat's why I'm heah." (Laughter.)

We must view the situation carefully and calmly, attempting to forecast the direction, duration, and probable extent of the present movement, and on that forecast base a program of action that will promise the broadest results in profit and satisfaction. That forecast must be revised constantly as the movement develops. We must keep our program of action so flexible as to be promptly adaptable as changes become apparently necessary. We must not hide our heads in the sand nor quarrel that conditions have changed and are changing.

Our industry one morning awoke to find imminent a campaign on the part of the fresh fruit and vegetable shippers, yeast manufacturers, and others, which, if it had not been successfully met, might have sounded our death knell. I refer to the proposed advertising of vitamins. At that time our industry set out to ascertain the facts. They did ascertain them. They found that as a matter of fact, canned foods were relatively higher in vitamins when placed on your table or mine, than the same foods cooked fresh from the garden in an open kettle on our own kitchen stoves. This particular attack was turned to rout.

Our industry today is watching the keenest interest the developments of freezing. We realize that there is in frozen hermetically sealed products (if a proper method of safeguarded distribution can be developed) a menace to foods hermetically sealed and sterilized by heat alone. It would be useless for us to blind our eyes to this situation. Quite contrary to that, we are co-operating in this movement in every possible way in making available all of the scientific information that can be helpful to the development of this new process; and should the ensuing months prove the feasibility and safety of this method of processing, I have no doubt that the National Canners Association will so amend their articles as to include this class of food conserver. After all, our primary function is to preserve a perishable seasonal product for consumption out of season. We are primarily producers.

You are primarily distributors. You must also be analysts, salesmen, super salesmen.

Have you all heard O. O. McIntyre's story of the super salesman? It seems a super salesman was despondently gazing down into the river from a high bridge. A nearby policeman, suspicious of him, walked over and tapped him on the shoulder, and said:

"Don't do that, old chap. Let's walk around the block and talk this over."

They walked around the block, came back to the bridge, and both jumped over. (Laughter.)

Well, you fellows can't do that to our industry. We won't jump. Just as movements lose their force, fashions change, tides flow—but ebb. There's a profitable place for all of us under the sun if we study and work.

The fullest message that I can bring you this morning is one of appreciation—appreciation of the necessity of the functions of a broker—appreciation of the fact that these functions are an integral part of the system of distribution. We realize that for the service you render, you are entitled to a commensurate compensation. (Applause.)

PRESIDENT JOHNSON: Thank you very much, Mr. Cosgrove.

There is one more committee I will appoint—in fact, it is already appointed, but one of our members is not in the brokerage business any more—I refer to the Resolutions Committee. Mr. John O. Knutson of Sioux City is Chairman; Mr. Fred Heryer is on the committee; and Mr. Arthur Hall, of Abbott & Hall, of Boston, Massachusetts. I want to remind those on the committees these reports will be made Thursday at our meeting.

I will ask Mr. Orr to please come forward and take charge of the meeting as I have to go to the National Wholesale Grocers meeting.

Mr. Wilbur R. Orr, First Vice-President, takes the chair.

VICE-PRESIDENT ORR: The next order of business will be the report of our worthy Secretary, Paul Fishback.

SECRETARY'S REPORT

THE annual report of the secretary on the activities, and the financial condition of the Association is required by the Constitution and is submitted as follows:

The receipts and expenditures in the conduct of the business of the Association are itemized.

The year of 1929 opened with the fruition of the hopes and endeavors of your officers and executive committees, following months of work, with the announcement on January 19th, immediately prior to the meeting of our twenty-sixth annual convention, by the Federal Trade Commission that the rules of the grocery trade were approved or accepted by the Commission with some amendments from the form in which they were adopted at the meeting of the Grocery Trade Practice Conference the previous October.

At the outset, your Association recommended and urged that members signify their acceptance of the rules, by filling their signature to an agreement to accept, with the Commission. Then the question was raised as to the responsibility, or liability of the food broker who is required by a principal to do that which is in itself a violation of one of the rules, but being a question of policy or practice by the principal, over which the broker has no control nor discretion, places the broker in the position of unwillingly but necessarily, if he intends to retain the account of the principal, violating the rules. Since the latter part of March we have endeavored to get a ruling as to the status of the broker under such circumstances, from the Federal Trade Commission. None has been forthcoming, but informal and unofficial opinions expressed by the department have been unsatisfactory, and in our opinion incorrect. It was then adopted as the policy of the executive officers of the Association, that members would not be urged further to signify their acceptance of the rules, until this question is settled. Notwithstanding this lull of inactivity on the part of the Association, Commissioner Hunt reported at the second meeting of the conference, held in November that 422 brokers had filed their signatures of acceptance with the Commission, more than any other branch of the trade, the next nearest being 394 wholesale grocers.

A second and most interesting meeting of the Grocery Trade Practice Conference was held on November 8th in Washington. The proceedings of this meeting are now being printed and copies will be supplied to our members. It is recommended that you read the statements for the resolutions and rules made by the representatives of the several associations present. A third meeting of the Confrence has been called for tomorrow, Wednesday aftrnoon, at 3.00 o'clock, at the Congress Hotel. Members of this Association are invited by the conference, and urged by your committee on Trade Practice Conference, to attend this meeting.

These following and continuing meetings of the conference are being arranged by the executive committee of the conference, set up last March as provided in the nineteenth rule, accepted by the Federal Trade Commission, which makes the conference a continuing body. The executive committee of the conference is planning a series of meetings, the general purpose of which is that the rules of the trade may be made as fully effective as possible through constant reiteration and education of the members of the trade to the full meaning of the rules, the benefits which will result from their observance and the neces-

sity of observing them, or facing the less pleasant alternative. It is gratifying to be able to say that a member of your Association was selected as secretary and treasurer of the executive committee of the conference, and that your Association has been accorded full recognition in the development of the purposes and work of the conference.

You were told of the Louisville Grocery Survey, undertaken by the United States Department of Commerce, last year at our meeting. In February a preliminary conference of the executives of industry was invited by the Secretary of Commerce, and several hundred such executives in industry, not alone groceries, but all other branches of manufacturing and distributing, gathered in Louisville. The preliminary reports indicated astounding discoveries being made by the investigators of the Department in their survey and a committee was formed to cooperate with the Department to carry the investigation to conclusions, that an informed and analytical report of the findings might be made. For some reason, on which we have no information, that committee was arbitrarily disbanded in November, and unless new life is put into the movement, the valuable data collected in Louisville, having a most important bearing on the development and future of the grocery industry, may gather moss and dust, without being developed to its proper conclusion.

After mature consideration, late in the year, a confidential bulletin was sent to the entire membership, asking that specific information be furnished of clear violations of the rules of the grocery trade, in order that there might be informative interpretations of the rules by the Federal Trade Commission in specific instances of complaint. There were thirty-six replies from our more than 800 members, indicating either that there is little reason for complaint of violations of the rules affecting food brokers, or that our members were not interested in preparing for the presentation of complaints to the Commission.

A little later in the year, shortly after the announcement that one of the larger California co-operatives, the Peach and Fig Growers Association, had changed its sales policy, joining forces with another organization which works through brokers exclusively, it began to seem as if a large principal who some eight or ten years ago, withdrew from brokers and opened sales offices, might be prevailed upon to resume the food brokerage method of distribution. A confidential letter was sent to some of our members to get an analysis of conditions in the markets in which we have members, in order that this principal might have some nourishing food for thought. The response to that letter was excellent, the information and statistics furnished of great value, but it has since been learned that some of the members thus addressed immediately wrote the principal, applying for his account. They forgot that the matter was under the seal of confidence, and by their premature activities have unsettled the entire program, and may have upset the possibilities of getting this valuable and representative account back into the hands of brokers. It is an interesting commentary.

During the year it has been necessary for your Secretary to spend eighty-six days away from the office on Association business. Meetings of the Executive Committee were held in New York in March, at the time of the organization of the new trade practice conference movement, in Chicago in June, and again in October, in Washington in November at the time of the second meeting of the grocery conference, and again in Chicago late in December. The full committee on Trade Practice Conference met in New York in March, in Chicago in October and in Washington in November.

In company with President Johnson, the Secretary attended the annual meeting of the Western Canners Association in Chicago in April, the American Wholesale Grocers Association in Memphis in May, the joint meeting of the National Association of Retail Grocers Association in Portland in June, and the Associated Grocery Manufacturers of America in Washington in November. Late in April we participated in the annual meeting of the Chamber of Commerce of the United States in Washington, and co-operated with others, interested in groceries, in the nomination and election of Francis E. Kamper of Atlanta, a past president of the retail grocers association, as Director of the Chamber of Commerce. It gives the food and grocery industry its first representation on the board of that important body.

The Association was represented at the final conference of business men, held on December 4th at Washington under the auspices of the United States Chamber of Commerce, at the request of the President, by First Vice-President W. R. Orr, of Danville, who was subsequently appointed to the committee formed by Chairman Julius F. Barnes, to represent your Association, a proper recognition of the importance in distribution of the food broker.

During the year it has been the pleasure of your Secretary to meet with group meetings or local associations of brokers, principally members of the National Association, at Philadelphia, Louisville, St. Louis, Richmond, Memphis, Butte, Portland, Seattle, San Francisco, Los Angeles, Phoenix, El Paso, San Antonio, Houston, Waco, Dallas, Oklahoma City and Kansas City. In Seattle, in company with President Johnson, we met with the Pacific Canned Salmon Brokers Association, in continuation of the movement started at the 1929 convention, as explained in the President's report.

Membership in the Association did not hold its own during 1929. The report of the chairman of the Membership Committee Thursday will show a slight loss. The gain in new members was below the average for the past several years. Is this due to the fact that members are not interested in keeping the Association on an even keel? Do we lose sight of the fact that the weight of the Association in its undertakings in behalf of food brokers is measured by the number as well as the quality of the membership?

PAUL FISHBACK
Secretary, National Brokers Association.

I want to insert here a word or two about a most interesting breakfast conference we had this morning with representatives of the newly formed Atlantic Sardine Canners Association. The sardine canners of Maine have organized to clean up bad practices of the sardine industry, and from the way those men talked this morning I believe they are going some place. They are ready to confer with us and work with us in a really genuine and sincere endeavor to clean up the difficulties that have messed up domestic sardines for many years.

The Association lost its treasurer, Bob Dietz, by sudden and untimely death on August 4th. I believe I may be forgiven for becoming personal in this formal report to pay tribute to Bob, who was my friend for years. He was quiet and unassuming, but a progressive and aggressive broker; he served the Association faithfully and well as treasurer, sought no further preferment and his counsel was sound and valuable. I will miss him.

There is none other than the trite expression, "He was a tower of strength" that will fit the activities of President Johnson during the year. His co-operation and support, aggressive and progressive attitude have had much to do with the advancement of the Association during the year. To have worked with him and the Executive Committee, Lu Wing, Harry Faulkner and Abe Lincoln has been a joy. With such men to guide and counsel, the work of the office of the Association has been pleasant. It has not been easy. This year there has been more hard work, more detail, more difficulty of accomplishment than any in the experience of the present incumbent. But these men especially, and all of you who have contributed constructive and forward looking criticisms and suggestions, have made it interesting and pleasant, and for all of this, I thank you. (Applause.)

VICE-PRESIDENT ORR: You have heard the reading of the Secretary's report. What is your pleasure?

MR. LUMAN R. WING, JR.: I move it be accepted as read. The motion was seconded and carried.

VICE-PRESIDENT ORR: The next speaker on our program is the President of the National Wholesale Grocers Association. It is my pleasure at this time to introduce to you Mr. T. F. Branham. (Applause.)

ADDRESS OF PRESIDENT BRANHAM, NATIONAL WHOLESALE GROCERS ASSOCIATION

PROBABLY nowhere in trade is the scale that measures the value of the service rendered adjusted to a greater degree of fineness than when applied to the function we call the broker. This is true because personal service is the only thing a real broker has to sell. I say "real broker" because you have found in your calling those who do not truly serve in the capacity they represent themselves. I refer to this because we all know from experience that evils creep in which cost all of us something when we undertake to benefit by short circuiting the other fellow to the special advantage of ourselves. Special privilege in America is not a growing industry, and I believe is becoming more unpopular each day.

Because of the nature of your occupation, there is no business where character counts for more. It is for this reason therefore that you need feel no serious concern for the future where you are performing this desirable and necessary function in the manner in which it should be performed.

I have followed the Trade Practice Conference from the very beginning. I firmly believe in its efforts, and have full confidence in its ultimate success. From the very beginning I have been attracted by the interest of your Association in this movement. I can say to you frankly if all interests had shown the enthusiasm you have we would be further along on the way to permanent success. You have taken a very commendable position from the start, and I am sure this position of such a representative organization will have telling effect in this effort to bring the industry to a higher standard.

It seems to me we are discussing these important subjects more freely than we ever have before. This is indeed encouraging. When each of us show a sincere desire to co-operate and do our part of this job as we should, the whole cause is sure to go forward and the public benefit thereby.

May 1930 bring you just reward for services rendered. It is with the greatest pleasure that I bring to you the greetings of the National Wholesale Grocers Association. (Applause.)

VICE-PRESIDENT ORR: The next order of business is the Treasurer's report. Is Mr. McDermed in the room?

The Secretary has a copy of his report, and will read it.

* * * *

VICE-PRESIDENT ORR: You have heard the reading of the Treasurer's report. What is your pleasure?

MR. JOSEPH KEEVERS: I move it be accepted and placed on file.

The motion was seconded and carried.

MR. LUMAN R. WING, JR.: While you are waiting for the next speaker, may I just have a moment?

VICE-PRESIDENT ORR: Certainly.

MR. WING: No doubt you have missed in our meetings, and on the floor below, the face of one of our past Presidents and trail blazers of this Association. I refer to Walter Frost. Walter is spending the winter in the Canal Zone, and I have a message from him I would like to read to you at this time.

"I wish you would do me the favor of presenting my compliments to the Brokers Association meeting in January and tell them how much I regret not being with them.

"It will be the first Convention that I will have missed since the first preliminary meeting forming the Association. Tell them that I am just as much interested as ever, and wish them all the prosperity in the world.

"Thanking you, I am,

"Very sincerely,

"Walter A. Frost."

(Applause.)

Wouldn't it be a nice thing to instruct the Secretary to either send Walter a telegram or cable—I don't know which would reach him—conveying to him the best wishes of this meeting. If it is in order, I move that such a message be sent to him.

The motion was seconded and carried.

MR. JOSEPH KEEVERS: This is not a matter for discussion, but we have been honored by the presence this morning of a man who has always been a friend of the brokers, solidly for us, one of the finest men it has been my pleasure to know, and we have known him intimately for years, Billy Frazier of the Franklin Refineries. I wonder if he wouldn't say a word to us.

MR. W. W. FRAZIER, JR.: I was sitting by Mr. Orr, and I asked him if I would have an opportunity of hearing him speak. I have never heard him speak before, and he knows I can't speak, either, so he said he would make me speak today.

I have been in business for forty years or more, and our business has always been conducted through brokers, and we have been successful, and I think a great deal of our success is due to the interest and loyalty of the brokers that have represented us in the different markets we do business in, and I think really that our brokers, at least, are the finest bunch of men I ever knew.

VICE-PRESIDENT ORR: Thank you, Mr. Frazier. I know the brokerage fraternity has no more staunch friend in the world than Mr. Frazier. Is there anything else?

It is my pleasure at this time to introduce to you Mr. George D. Olds, President of the Associated Grocery Manufacturers of America.

ADDRESS OF PRESIDENT OLDS, ASSOCIATED GROCERY MANUFACTURERS OF AMERICA

I WAS just asked how the galloping orator was this morning. The "galloping" is all right, but you will have to judge about the "orator."

I just came from the Wholesale Grocers meeting, and I will say that I made a resolve to them, which I would repeat in your case, that I would not try to tell them how to run their business, for two main reasons; one was, I thought they knew; and the other was, I thought I didn't. I had an experience in our own meeting last fall which made me make this resolve. In a debate I had the occasion of trying to get the sympathy of the audience a little bit by telling them in spite of what I might say I did not pretend to be any economist. My opponent was a brilliant orator and a clever lawyer, and the first thing he said was I had wasted the time of the audience completely by saying I was no economist, which was a thing that required neither proof nor statement.

So, I am not going to pose as knowing anything about the brokerage business.

To come before you and hope for your attention for a short time today gives me an odd feeling of relaxation. Not that writing or delivering speeches is my favorite form of sport. It isn't. The point is that many of you I have known mighty well for nearly ten years and, anyway, between manufacturer and broker there are few of the unavoidable reservations that grow up between buyer and seller. We send you your checks. No other member of the trade has that privilege—of writing checks and mailing them to you. Wouldn't it be fine if that were always the least pleasant kind of correspondence we had to put in the mail to you?

In all seriousness, where in the grocery trade, is there any more vital sympathy than between manufacturer and broker? You ask the least of us of anyone and you are in the position to give a great deal. Our interests are your interests. When we become weak so do you. The advertised brand, with all its novel risks to you, has been your real making. No doubt many of you look back with longing to the good old days when in the many bulk commodities, carloads were the rule and your commission came big for one selling effort. Today your work is twice as great to sell a hundred cases. But you will agree, I think, that once the branded product of your principal is established you can count on your annual income as long as the account is yours almost as surely as can the insurance agent on his renewals. Our national brands have stabilized and made relatively permanent your source of business income. Yes, we manufacturers and you brokers have common interests. I want to take time to mention only a very few of the most outstanding of these.

You and we are both charter members, so to speak, of the Trade Practice Conference. We are both taking it very seriously. We cannot overdo this. It is not enough to talk of it only as an approach to a great ideal of trade co-operation. We must apply our minds to its study, to determine its significance and how it can be brought nearer to the aim of practical value. We must not ignore the great moral effect which the Conference has already had. Thinking in trade relations today is clearer and fairer by reason of what has already taken place; but those who give the movement real thought must agree that general expressions of business and trade ideals cannot carry us the whole distance. The Conference must be applicable to specific cases, particularly for their educational value, and without delay. However, temperate thought must be used in directing criticism at various trade practices. Adoption, for instance, of a form of distribution by any trade factor is not in itself a violation of rules of fair dealing. Cash and carry wholesaling, for example, may be stiff competition for a service wholesaler but is not in itself unfair. Private brands may be very annoying to a manufacturer who advertises his merchandise, but the fact that a wholesaler chooses to become a competitor of those for whom he distributes is not necessarily unfair. It is the practices that result that are the concern of the Conference.

In the rules of the Conference, two questions were not covered—the matter of precise definition and that of method of

procedure. There was a time when it seemed to me that the need was for practise definition of terms and the exact explanation of the limiting phrases such as "uneconomic and unjust." I am inclined to think that is not now the principal necessity. The terms may mean quite different things, under different circumstances. And exact definition might provide opportunity for an evasion of the letter which could be a real violation of the intent of the resolution. There are, of course, some of the rules which involve economic questions so profound and so confused as to defy the analytical powers of any of us. On these the help of unbiased academic minds is already being sought. Still, the question before us now is of method of procedure to make the resolutions and the whole fact of the Conference promptly effective. There are glaring cases of violation of the trade code expressed in the Conference resolutions going on before our eyes. There is general agreement as to the meaning of the particular rules involved and the fact of their violation. Doubt as to method of procedure rather than as to the merits of the situation has caused the hesitation and delay in bringing about action. In this connection there have arisen a number of difficult questions. It is properly asked, "Is the Conference empowered to be a judicial body as to the facts of a particular case? Is the Executive Committee so empowered? Has either authority to punish or even publicly to censure, the offender? Do we need an umpire?"

I have often asked myself how I should want others in the trade to act in case they felt my company was violating the code of the Conference. I believe my answer is the same as yours. I should want two or three men of character and breadth to come to me and talk it over quietly and frankly. I should want to unearth the actual facts of the case and present them to this small group for discussion. Of course, I should want some assurance that if any others were engaged in the same practice they were also being approached. I am sure that, when we had finished, one or the other, probably both, would have found a new point of view. Meeting of men face to face is an almost irresistible influence for agreement. In such a case the terms of the rule in question would be defined only in accordance with the particular circumstances involved. Certainly force, even of public opinion, would be an unnecessary weapon. That, in my opinion, is the way to settle our difficulties. We shall all come to see before long how valuable the Trade Practice Conference is as a conscious group expression in favor of fair play and the provision of a form for its discussion.

You ask quite properly, "What are we going to do with the violator of rules who keeps on with his harmful practices and will not yield to the pressure of the gloved hand?" Such cases will, I think, be rare; but they will occasionally come up and we must know how to handle them. It seems to me there is only one answer. Reluctantly, and as a last resort, we must invoke the judgment and power of the Federal Trade Commission. If anyone fears the effect of this as bringing Government into business, it is a fair question whether this is not by far the less of two evils. It is also a proper question whether it is not better for a joint trade group to ask the Commission's help after genuine efforts have failed than to have the Government step in on its own initiative. Gentlemen, the Trade Practice Conference is far from dead. Moreover, it will not become so because it will come to grips with the facts. The minds that are working on its problems are among the best in our industry. It is true that they are faced, for the present, with the fact that all groups of the industry are not supporting the movement by their presence; but the movement is bigger than any single trade faction. We have confidence that in intelligent, aggressive, fearless hands it will bring us good.

Now we all do need help, too! Here is the second common interest between us. In general, if we wanted to have a good, old-fashioned "sob-session," as we used to call it in school, we would agree that the changes in grocery distribution have hurt us a lot, have made a formerly clear line of action become confused, have made it much harder to carry on business at a profit.

Under these conditions, it is easy to start knocking. We can easily see, and as easily talk about, the faults in the newer kinds of distributor or in the methods the older kinds take to protect their existence. Fear magnifies these faults and obscures any offsetting virtues. These are natural reactions; but it is the common interest of brokers and manufacturers, of course of all the trades too, to apply a little self-analysis to find the solution of these troubles. These upsetting changes are attempts to respond to a consumer insistence which is far too powerful for any of us to resist. It is worth our while to study them and see whether we can discover in their consumer support perhaps even a protest against the excess costs of our own inefficiencies. Thus from our most harassing competitors we may learn the solution of our troublesome problems. As Mr. Cheney, Vice-President of the Irving Bank, said quite recently, "The New Era in Food Distribution will come when all factors will stop baiting each other and start learning from each other."

Let's be specific. Private brands are a growing source of difficulty to the manufacturer. They will not be stopped by joint opposition, by the enlistment of the trade boycott, nor by knocking them among those who do the packing. Our cue is first to find out what we have done to make the distributor prefer to go to all the trouble of marketing his own brand rather than ours. The answer to that I think we already have. Our second job is to find out what we manufacturers can do to make the distribution of our brands more attractive than that of private brands. That is a very much harder job. But you see both jobs are ours. The wholesaler has learned this technique in a growing number of cases. Where he used to enlist the boycott in his fight to save his market from the chains, today he often works his brain to discover how he can apply the methods of chain success to make his business so efficient that it will win consumer support. How much more honorable and effective this is than the distribution of insinuating pamphlets!

Some large advertisers have established their own advertising agencies, space brokers we might call them. Why? Because the compensation of agencies was, in their opinion, out of proportion to the service supplied. How similar is this to one of your problems. I don't know much about it but I imagine the reason why large distributors have in some cases formed their own brokerage houses is because the service they were getting from brokers was not enough to justify the brokerage paid. Working from this point of view, isn't there just a chance that you can improve the service you provide enough to keep other distributors from following that annoying policy? Take this matter of mergers. They certainly have hurt and apparently through no fault whatever of yours. I think I know how you feel when I have worked up a large chain account to big proportions and then change of buyers, or perhaps a chain merger, throws me out and I have to start all over again. I have no answer in this case. It is one of the newer risks of business. I do know, however, that a number of brokers have been forced by the shock of losing 75 per cent of their business to examine their methods and their possibilities as they never would have done otherwise and are today better off in income and in working spirit because of the change.

I didn't come here to tell you how to run your business. If we manufacturers knew, we might do a much better job of our own. What we can do here is recognize that we have many interests in common. We are both in the same boat. It is like the well known ship that was in a dangerous storm at night. The mate wanted to anchor but the captain wouldn't. "You go forward," he said, "and tend to your end of the ship. I'll tend to mine." Half an hour later the captain called the mate aft and complained. "What's wrong with this ship? She won't fill her sails, she won't steer. I can't do a thing with her." "I don't know what's wrong with your end, Cap," shouted the mate, "my end's anchored." You and we can well tend to our own ends of the ship, but we must not forget that those ends are parts of one ship which is keeping us both afloat. (Applause.)

VICE-PRESIDENT ORR: Thank you, Mr. Olds, we certainly are indebted to you for a most interesting and instructive address.

President Johnson is back in the room; I will relinquish the Chair to him.

Upon motion duly made and seconded the meeting adjourned at 12 o'clock, to reconvene tomorrow morning at 9:30 o'clock, Wednesday, January 22, 1930.

THURSDAY MORNING SESSION
JAN. 23, 1930

The meeting convened at 10:40 o'clock, President Johnson presiding.

PRESIDENT JOHNSON: At this time we have the reports of the standing and special committees of the Association. The report of the president when approved by the Executive Committee, becomes the report of that committee and it was read Tuesday morning, as approved. Mr. Kroehle, chairman of the Advisory Committee submitted his report at the meeting yesterday morning. The same is true of the report of Mr. Kline, chairman of the Committee on Canners' and Distributors' Conference. Mr. Bloch, chairman of the Committee on Trade Practice Conferences asks that the report made Wednesday morning be considered as the report of his committee.

I will now call on Mr. Charles C. Miller, of Philadelphia, Chairman of the Committee on Ethics.

REPORT OF COMMITTEE ON ETHICS

THERE was not anything brought up to your Committee this year, so I haven't any special report. I would like to suggest the thought that the local organizations instill in every member the right interpretation of the word "ethics." I am sure if the local bodies live up to a fair and honorable code of ethics, it will be reflected in the National Association and we will all be benefited.

PRESIDENT JOHNSON: Thank you very much, Mr. Miller. We will next have the report of Mr. P. J. Murphy, of Chicago, Chairman of the Finance Committee.

REPORT OF FINANCE COMMITTEE

MR. P. J. MURPHY: I am pleased to submit the following report:

There were vouchers numbered 2646 to 2862, inclusive, to which I affixed my signature jointly with that of the President and Secretary.

These vouchers corresponded with the disbursemnts as shown by the Secretary.

MR. JOSEPH KEEVERS: I move the report be accepted and placed on file.

The motion was seconded and carried.

PRESIDENT JOHNSON: Next is the report of the Legislative Committee, but Mr. B. T. Clifford, of St. Louis, the Chairman of that Committee is not present.

I will now call for the report of the Membership Committee. Mr. Wilbur R. Orr, of Danville, Chairman.

REPORT OF MEMBERSHIP COMMITTEE

MR. WILBUR R. ORR: The time is short this morning, so I won't go into this by States. The detailed statistics will appear in the printed report, however.

Some of the members seem to think that what we ought to have is a lot of members. On the Membership Committee this year, some of the directors have cooperated very well, and some have not. One director we have has not answered a single letter any of us has written him. We need the members, but we don't need members bad enough to take every Tom, Dick and Harry that comes along.

We have for gain in 1929, 26 new members and 15 new branch office members, making a total of 41.

We have lost during the year, by consolidation, 6; by change of nature of business, 4; retired from business, 3; dropped by action of Executive Committee, 2; business sold and membership dropped, 2; consolidation of a principal office, 1; and resigned for no reasons given, 11; liquidation, 1; membership unnecessary, 1; branches closed by principal office, 7; dropped for non-payment of dues, 9; making a total of 47. Net loss for the year was 6, and at the close of the year we had six new application on file, and we have secured three during the convention. Membership as of January 1, 1930, 908 members. If these nine new applications are all right, that will give us 818.

MR. JOSEPH KEEVERS: I move the report be received and placed on file.

The motion was seconded and carried.

MEMBERSHIP GAINS AND LOSSES DURING 1929

New Members	26
New Branch Office Members	15
	41

LOSSES

Consolidation of two member firms	6
Change of nature of business	4
Retired from Business	3
Dropped by action of Executive Committee	2
Business sold, membership dropped	2
Consolidated principal office	1
Resigned:	
For no good reason	11
Liquidation	1
Membership unnecessary	1
Branches closed by principal office	7
Dropped for non-payment of dues	9
	47
Net loss for 1929	6
Membership as of January 1, 1930	809
Applications on file January 23, 1930	9

MEMBERSHIP STATISTICS—1930

State	Principal	Branch	Additions Principal	Additions Branch
Alabama	13	0	1	0
Arizona	4	3	1	0
Arkansas	12	2	1	2
California	45	10	2	1
Canada	4	7	1	0
Colorado	15	0	0	0
Connecticut	1	1	0	0
District of Columbia	5	1	0	0
Florida	13	4	0	0
Georgia	12	0	0	0
Idaho	1	0	0	0
Illinois	45	8	2	2
Indiana	21	1	0	0
Iowa	12	8	0	0
Kansas	4	5	0	0
Kentucky	12	2	0	0
Louisiana	14	0	0	0
Maine	1	0	0	0
Maryland	12	4	0	1
Massachusetts	25	1	1	0
Michigan	16	0	2	0
Minnesota	20	8	1	0
Mississippi	5	0	0	0
Missouri	35	4	1	0
Montana	6	2	0	0
Nebraska	8	4	0	0
New Jersey	1	0	0	0
New Mexico	2	2	0	0
New York	66	9	3	1
North Carolina	5	3	1	2
North Dakota	2	1	0	1
Ohio	38	0	2	0
Oklahoma	12	8	0	0
Oregon	5	4	1	0
Pennsylvania	45	6	1	0
Rhode Island	2	0	0	0
South Carolina	2	1	1	0
South Dakota	2	1	0	0
Tennessee	18	3	1	1
Texas	43	15	2	3
Utah	5	1	0	0
Virginia	21	1	1	0
Washington	10	7	0	0
West Virginia	17	0	0	0
Wisconsin	13	2	0	0
	670	139	26	15

PRESIDENT JOHNSON: Next is the report of the Committee on State and Local Organizations. Mr. A. T. Amos, of Spokane, Chairman.

Mr. Amos is not here, so I will call upon Mr. John O. Knutson, of Sioux City, Chairman of the Committee on Resolutions.

REPORT OF RESOLUTIONS COMMITTEE

MR. JOHN O. KNUTSON: The report of the Resolutions Committee is more or less a cut and dried proposition. We have some formal resolutions, and I will read them all through as hurriedly and as briefly as I can.

RESOLUTION No. 1

A RESOLUTION OF RESPECT FOR DEPARTED MEMBERS

"WHEREAS, The inevitable summons has called many of our esteemed fellow members, whose presence and counsel will no longer be ours to share, be it

"RESOLVED, That a page in our records be set aside and suitably inscribed to the memory of:

George William Bentley, Sr., The Geo. Wm. Bentley Company, Boston, Mass.

C. E. Cumberson, The C. E. Cumberson Company, San Francisco, Calif.

Robert H. Dietz, C. L. Dietz & Co., Indianapolis, Ind.

Frank W. Hoe, The Kiser & Hoe Company, Columbus, Ohio.

Frank A. Golsch, Jones Brothers, Bloomington, Ill.

John J. O'Connor, J. J. O'Connor & Co., Philadelphia, Pa.

R. H. Parker, R. H. Parker & Co., Buffalo, N. Y.

Frank J. Ronayne, Griffith Brokerage Company, Wichita, Kan.

James R. Scott, Scott Mercantile Company, St. Louis, Mo.

Walter J. Sears, (An Honorary Member), Chillicothe, Ohio.

William E. Standley, W. E. Standley Company, Pittsburgh, Pennsylvania.

J. J. Thornton, Ebeling-Thornton Company, Houston, Texas.

Leon F. Webb, Webb & McKnight, Memphis, Tenn.

MR. KNUTSON: As far as has come to our notice, this includes all of the members who have died in the past year. Mr. Chairman, I move the adoption of this resolution.

The motion was seconded, and carried.

MR. KEEVERS: I move you, Mr. Chairman, that these resolutions be read, and unless there is objection as they go along, that we adopt them as a whole.

The motion was seconded and carried.

RESOLUTION No. 2

A RESOLUTION OF APPRECIATION OF CO-OPERATION ON THE PART OF ALLIED ASSOCIATIONS

"WHEREAS, The importance of genuine co-operation and mutual understanding among the major elements of any branch of trade or industry, is well recognized; and particularly that of food manufacturing and distributing and allied groups, be it

"RESOLVED, That the National Food Brokers Association express its special appreciation of the good will and co-operation extended to this Association and to its officers and members, by the officers and members of hte National Canners Association, Canning and Machinery Supplies Association, the National Wholesale Grocers Association, The American Wholesale Grocers Association, The National Association of Retail Grocers, The National Chain Store Association, Sugar Institute, Inc., and the Associated Grocery Manufacturers of America."

RESOLUTION No. 3

A RESOLUTION OF THANKS TO SPEAKERS

"WHEREAS, One of the most interesting and stimulating sessions of this Association for many years, has been that session in which we are privileged to receive the personal messages from representatives of the Allied Associations, be it

"RESOLVED, That we extend a special vote of thanks to those who so favored us at the session of Tuesday forenoon of this convention, including:

R. W. Rowe, Secretary, American Wholesale Grocers Association.

Thomas F. Branham, President, National Wholesale Grocers Association.

George D. Olds, Jr., President, Associated Grocery Manufacturers of America.

E. B. Cosgrove, President, National Canners Association.

Gordon Kellogg, President, Canning Machinery and Supplies Association.

RESOLUTION No. 4

A RESOLUTION ACKNOWLEDGING THE CO-OPERATION OF THE PACIFIC CANNED SALMON BROKERS ASSOCIATION

"WHEREAS, As a result of a conference held during the 1929 Convention, our President and Secretary visited the Pacific Coast and were given a cordial reception by the Pacific Canned Salmon Brokers Association; and as a result of this conference there is abundant evidence that the mutual interests of the two Associations has been substantially promoted, be it

"RESOLVED, That we express our appreciation of the spirit of good will and co-operation manifested by the officers and members of the Pacific Canned Salmon Brokers Association, and that we pledge our united support to the program looking towards complete elimination of the trade abuses and discriminations that have heretofore been known to exist."

RESOLUTION No. 5

A RESOLUTION OF COMMENDATION TO THE COMMITTEE REPRESENTING THIS ASSOCIATION IN THE MEETINGS OF THE GROCERY TRADE PRACTICE CONFERENCE

"WHEREAS, This Association has had a very prominent part in the deliberations of the various meetings of the Grocery Trade Practice Conference held during the past year, and

"WHEREAS, Our Association has been ably represented by the committee appointed to represent us in the Continuing Conference as provided in Rule No. 19, and the members of this committee have accomplished much more than can be specified or which appears on the surface, towards a solution of the various problems involved, be it

"RESOLVED, That we commend the work of our committee and extend to them a sincere vote of thanks for their splendid work, and urge that they carry on with a pledge from this Association that we are back of them collectively and individually."

RESOLUTION No. 6

A RESOLUTION REAFFIRMING OUR APPROVAL OF THE RULES OF THE GROCERY TRADE PRACTICE CONFERENCE

"WHEREAS, This Association has been vitally interested in the program of the Trade Practice Conference of the Grocery Trades from its inception, and is definitely committed to the rules that have already been adopted, be it

"RESOLVED, That we reaffirm our pledge in support of the rules as approved by the Federal Trade Commission, and urge upon our representatives in the Continuing Conference the greatest possible activity in the promotion of the aims and purposes of these rules through the education of all the members of the trade, and be it further

"RESOLVED, That if this educational process appears too slow, thereby minimizing the effectiveness of these rules, the Executive Officers of this Association shall be instructed and urged to press forward for a constructive and corrective application of these rules, through appeal to the proper department of the Federal Trade Commission."

RESOLUTION No. 7

A RESOLUTION RENEWING OUR PLEDGE OF DILIGENT SERVICE ON BEHALF OF OUR PRINCIPALS

"WHEREAS, At the convention of the National Canners Association in 1928, certain resolutions were approved wherein the principle that brokerage is a definite part of the cost, rather than the selling price of a commodity was affirmed; and that Association further urged upon its members that the party employing the broker be considered the one for whom the service is rendered and the one from whom he (the broker) should receive his compensation, and

"WHEREAS, At the convention of the National Food Brokers Association, the same year, we adopted a strong resolution placing the burden of satisfactory service squarely upon the shoulders of the members of this Association, and

"WHEREAS, At no time since this Association was formed, has the professional aspect of the brokers' services been more apparent, and the economic value of these services more generally recognized, be it

"RESOLVED, That we hereby reaffirm the pledge of this Association on behalf of each and every member to work as they have never worked before to promote the interests of their various principals in their respective markets as the most effective method of proving that in co-operation with the membership of this Association, may be found the best solution of the problem of extravagant selling costs, and the flagrant wastes incident to distribution of grocery commodities."

MR. KNUTSON: Following the decision of Sunday evening on the question of payment of brokerage in overlapping territories, it seemed desirable on the part of the membership of the Resolutions Committee that we put this into resolution form in order that we might show this action was taken at the initiative of the principals and not the brokers. I will read the resolution.

RESOLUTION No. 8

A RESOLUTION WITH REFERENCE TO THE PAYMENT OF BROKERAGE IN OVER-LAPPING TERRITORIES

"WHEREAS, It appears that various packers and manufacturers have raised the question of the proper distribution of brokerage in territories affected by sales to firms having branches located in markets assigned to other brokers, and

"WHEREAS, After a free and full discussion of the matter was had at the Sunday evening session of this convention, in which it was the overwhelming sense of the meeting that such division should be on the basis of one-third to the broker making the sale, and two-thirds to the broker in whose territory the delivery is made, be it

"RESOLVED, That this Association recommended to the interested parties in such case that they adopt this decision on the part of the National Food Brokers Association as a policy that is fair to all concerned, and to govern themselves accordingly."

MR. KNUTSON: I wonder if there should be any comment on the reading of that resolution? Most of you were there, and know just what took place.

RESOLUTION No. 9

A RESOLUTION TO CONFIRM ACTIONS TAKEN AT THE SUNDAY EVENING SESSION

"WHEREAS, Question might be raised with reference to the binding effect of motions passed and actions taken at the Sunday evening session of this convention, be it

"RESOLVED, That we hereby confirm all such actions which are not otherwise specifically abrogated or modified by subsequent actions taken by this convention."

MR. KNUTSON: I need not explain, I imagine, that is on account of the possible technical interpretation that might be placed on anything that was done on Sunday.

RESOLUTION No. 10

A RESOLUTION OF THANKS TO THE OFFICERS OF THIS ASSOCIATION

"WHEREAS, The affairs of this Association have been exceptionally well conducted during the past year, and the interests and the dignity of the brokerage profession have been upheld throughout the trade, and

"WHEREAS, Such success could only result from the efficient and conscientious discharge of their duties on the part of our President and Executive Committee, be it

"RESOLVED, That this Association extends to the retiring officers a sincere vote of thanks, and especially do we feel grateful for the gracious and efficient services rendered by our retiring president, Mr. Willis W. Johnson."

MR. KNUTSON: These resolutions are signed by myself, as Chairman, and Fred W. Heryer and Arthur D. Hall.

Mr. Chairman, I move the adoption of the resolutions as read.

The motion was seconded and carried.

PRESIDENT JOHNSON: Our next report is from Mr. A. B. Clark of Denver, Chairman of the Nominating Committee.

REPORT OF NOMINATING COMMITTEE

MR. A. B. CLARK: The Nominating Committee, appointed by the President, has the following names to suggest for the year 1930:

President—Wilbur R. Orr, of Wilbur R. Orr Company, Danville, Illinois.

First Vice-President—Samuel T. Miller, of Cook, McFarland & Co., San Francisco.

Second Vice-President—Charles A. Carey, of C. A. Carey Company, Philadelphia.

Third Vice-President—Julius Ormand, of Ormand Brothers Brokerage Company, Birmingham, Alabama.

Treasurer—J. L. McDermed, of C. L. Dietz & Co., Indianapolis.

PRESIDENT JOHNSON: Are there any other nominations?

MR. JOSEPH KEEVERS: I move the nominations be closed, and that the Secretary cast the full vote for the nominees.

The motion was seconded and carried, and Secretary Fishback cast the ballot of the Association for the nominees.

PRESIDENT JOHNSON: I want to introduce to you Mr. C. A. Carey, of C. A. Carey & Co., Philadelphia, our new Second Vice-President.

MR. C. A. CAREY: I very much appreciate the compliment. I do not know what the Second Vice-President has to do.

PRESIDENT JOHNSON: The next gentleman is Mr. Samuel T. Millar, of San Francisco, California, our new First Vice-President. (Applause.)

MR. SAMUEL T. MILLAR: Thank you, gentlemen, very much. I will try to fill the position as best I can.

PRESIDENT JOHNSON: We know you will, Sam. We have a mighty nice line-up here, according to my way of thinking.

I will appoint Mr. Joe Keevers and Charles Whiteman to escort the new President of our Association for 1930 to the Chair. If you can lift him, all right.

PRESIDENT JOHNSON: Gentlemen, I take great pleasure in presenting to you the new President of the National Food Brokers Association.

MR. KEEVERS: Mr. President-Elect, before you start, I want to offer a rising vote of thanks to the retiring President.

A rising vote of thanks was extended Mr. Willis W. Johnson, retiring President.

MR. WILLIS W. JOHNSON: Thank you, and I want to say I certainly appreciate the support that has been given me this year. I never had a more pleasant year. I had plenty to do all right, but it was the finest bunch of men I ever had to work with in my life.

PRESIDENT-ELECT ORR: Willis, if I didn't think I had that support, I would certainly hate to undertake this task.

The next order of business is the report of the tellers on the election of directors.

SECRETARY FISHBACK: Mr. President, I see neither of the tellers are in the room. They have turned the report over to me, and I will read it.

REPORT OF TELLERS ON ELECTION OF DIRECTORS

The undersigned, having been appointed tellers by the President, in the election of Directors by the direct vote of the members, as provided in Article IV, Section 9 of the Constitution, have to report that on October 31st, primary ballots were mailed to all members in good standing. On November 25th, these ballots were opened and tabulated, tie votes were broken by lot, and final ballots containing the names of the nominees mailed to the members on November 30th. On January 3rd these final ballots were opened and tabulated, tie votes were broken by lot, and the results are as follows, with respect to the majority vote:

Alabama—S. T. Shank, Montgomery.

Arizona—E. G. Sporleder, E. G. Sporleder Company, Phoenix.

Arkansas—A. Z. Orto, Orto Brokerage Company, Pine Bluff.

California, North—E. C. Boobar, Hoffman & Greenlee, San Francisco.

California, South—L. J. Fairbanks, Schiff-Lang Company, Los Angeles.

Canada—A. J. Smale, Donald H. Bain, Ltd., Winnipeg.

Colorado—Howell Givens, The J. B. Morris Company, Denver.

Connecticut—Arthur H. Gosselin, A. L. Johnson Company of Connecticut, New Haven.

District of Columbia—Walter Leaman, Leaman & Martyn, Washington.

Florida—T. J. MacClinchey, Saussy, Common & MacClinchey, Jacksonville.

Georgia—J. E. Raley, Raley Brothers, Inc., Atlanta.

Illinois, Down State—T. W. Watson, Hosmer, Perry & Watson Brokerage Company, Cairo.

Illinois, Chicago—E. P. Gale, Lee, Kaufman & Gale, Chicago.

Indiana—Ralph N. Henderson, Ralph N. Henderson Company, Terre Haute.

Iowa—Park W. McManus, Davenport.

Kansas—H. W. Johnson, Seavey & Flarsheim Brokerage Company, Wichita.

Kentucky—C. D. Callihan, Lexington.

Louisiana—J. M. Cobb, Cobb-Jackson Company, Monroe.

Maine—James J. Hughes, Portland.

Maryland—Harry H. Mahool, Harry H. Mahool & Co., Baltimore.

Massachusetts—A. H. Morse, A. H. Morse & Co., Boston.

Michigan—Mrs. Anne B. Squier, Baldwin & Squier, Detroit.

Minnesota—R. E. McCallum, Lincoln-McCallum Company, St. Paul.

Mississippi—C. H. Calhoon, Crenada.

Missouri—Geo. W. Hepler, Hepler Brokerage Company, Kansas City.

Montana—M. V. O'Neill, Carr-O'Neill Brokerage Company, Great Falls.

Nebraska—Paul Wernher, Cartan & Jeffrey Company, Omaha.

New Mexico—M. L. Murdoch, Brown Bros. Brokerage Company, Albuquerque.

New York, Up-State—E. T. Dahl, Arthur F. Wille Company, Syracuse.

New York, City—Harold J. Lestrade, Lestrade Brothers, Inc., New York.

North Carolina—J. B. Brinkley, Southeastern Brokerage Company, Wilmington.

North Dakota—A. A. Bloom, Swiggum Brokerage Company, Fargo.

Ohio—A. R. Hoge, Columbus.

Oklahoma—W. M. Morris, Meinrath Brokerage Company, Oklahoma City.

Oregon—Ralph J. Demmer, Portland.

Pennsylvania, West—G. E. Sutter, Esenwein & Sutter, Pittsburgh.

Pennsylvania, East—Edwin C. Eckman, Wm. G. Bonstedt & Co., Philadelphia.

Rhode Island—Arthur L. Johnson, A. L. Johnson & Co. of Rhode Island, Providence.

South Dakota—Francis N. Coon, Francis N. Coon & Co., Sioux Falls.

Tennessee—T. H. McKnight, Webb & McKnight, Memphis.

Texas, South—B. C. McCreless, Inter-State Brokerage Compapny of Texas, San Antonio.

Texas, North—Fred Z. Mills, Mills-Erwin Company, Dallas.

Utah—Don E. Ray, Ray & Whitney Brokerage Company, Salt Lake City.

Virginia—Walter L. Lefew, W. W. Lefew's Sons, Richmond.

Washington—L. F. Gault, Ariss, Campbell & Gault, Tacoma.

West Virginia—John Christian, Christian & Co., Huntington.

Wisconsin—Sherman T. Stevens, W. H. Stevens Company Milwaukee.

In one district both nominees found it impossible to accept,

particularly the one receiving the majority vote, and in this case, the tellers have substituted the name of the member receiving the third highest number of votes in the primary campaign. No nominees were offered for Directors in the States of Idaho, New Jersey and South Carolina. Less than 50 per cent of the members expressed their preference in the primary voting, and 74 per cent voted for the election of the Directors. It is moved by one teller and seconded by the other that the members named in the foregoing list be declared elected Directors of this Association for 1930.

Submitted,
H. W. Howland, Teller.
A. E. Coddington, Teller.

Attest: Paul Fishback, Secretary.

The motion carried.

MR. C. A. CAREY: Does New Jersey have any members?

SECRETARY FISHBACK: We have one there.

MR. CAREY: Where is he located?

SECRETARY FISHBACK: Newark.

PRESIDENT-ELECT ORR: There will be a meeting of the newly elected Directors immediately following this meeting, and now a motion for adjournment is in order, unless there is some new business to be discussed.

MR. JOSEPH KEEVER: I move we adjourn.

The motion was seconded and carried.

Whereupon, at 11.10 o'clock A. M. the Twenty-Seventh Annual Meeting of the National Food Brokers Association stood adjourned.

MEETING OF THE NATIONAL SYRUP AND MOLASSES ASSOCIATION

HOTEL CONGRESS, CHICAGO, JAN. 21, 22, 23, 1930

THE National Syrup and Molasses Association, which has adopted as its slogan "The World's Basic Sweets Industry," just concluded its fourteenth Annual Convention at its sessions on January 21, 22 and 23, 1930, held at the Congress Hotel, Chicago, Ill. Representatives were present from Halifax, Nova Scotia, to New Orleans, La., and from the Atlantic to the Pacific Coasts.

From the moment that President Edwin L. Powell, of New Orleans, first sounded the gavel, the elaborate program progressed with unusual pep and accomplishment without delay or interruption until the gavel last sounded for adjournment.

The very progressive attitude of the Association's officials and the unusual success which has been attained by their efforts for the past year were recognized by the membership in the re-election of President Powell and the Board of Directors, and in several instances over the protests of the officials themselves. The following officers and directors were elected for the ensuing year:

President—Edwin L. Powell, New Orleans, La.

Vice-President—Wm. H. Burns, Philadelphia, Pa.

Secretary-Treasurer—George P. Williams, Kansas City, Mo.

Board of Directors—L. B. Whitfield, Sr., Montgomery, Ala.; Charles A. Harmeier, Pittsburgh, Pa.; Oscar A. Saar, New York, N. Y.; E. Luke Cain, Atlanta, Ga.

The high standard of the personnel of the officials of the organization gives every evidence of them being equal to the heavy task they have before them. One of the first and very important issues which came before the convention was that of the revision of the tariff law and its far-reaching effect and its ultimate result in affecting the price to the consumer.

A resolution was passed to be presented to the Senate and House of Representatives petitioning them to place edible molasses and sugar syrups in an equitably relative position in the tariff schedule with that of sugar, with due consideration to importations from Cuba and other countries.

Probably one of the most interesting features of the meeting and one that will make history for the Association was that of the legal adoption by the Association of a Code of Ethics constructed from the famous formula of Rotary International, which was gathered together by Secretary Williams from the very best points and potential features of eleven national associations doing business in this country. Its unanimous approval was shown from the fact that it was accepted word for word in its entirety by the Board of Directors at their meeting and again at the general meeting.

The launching of NATIONAL SYRUP WEEK by the Association promises to be a project of great activity not only in its celebration, but in its preparation. Committees were appointed for the handling of detail in connection with this nation-wide movement.

Formal adoption of the new and splendid insignia for the Association was likewise met with enthusiasm by all present at the Convention. This, too, marks an epoch in the history of the organization, as the trade generally will recognize the great value of this insignia linked up with the Code of Ethics of better business practice.

There were numerous addresses on various subjects, among which Mr. J. Chapin, Secretary Associated Corn Products Manufacturers, upon the subject of Weight and Measures as applied to syrups.

Dr. P. B. Dunbar, Assistant Chief, Food, Drug and Insecticide Administration, U. S. Department of Agriculture, Washington,

ED. L. POWELL
President

GEO. P. WILLIAMS
Secretary

National Syrup and Molasses Association

D. C., gave a splendid address upon the attitude of the Department and its position with relation to the producer, packer and consumer, handling his subject in an eminently creditable manner.

Mr. Charles A. Harmeier, of Pittsburgh, Pa., dwelled at length upon the great injustice and grave dangers of so-called "impure advertising" of products of the industry which is now being perpetrated upon the American public. Also the improper labeling and deceptive devices which are being used by unscrupulous manufacturers.

The officers and directors of the Association have been charged with the great undertaking of bringing back to the industry the former per capita consumption of its products and the enlightenment of the American people of the grave dangers to health in minimizing or eliminating sweets from the diet. Within the last few months the industry has been awakened by statistical figures showing a great increase in the number of under-nourished persons and an appalling increase in tubercular cases directly traceable to under-nournishment. This condition has reached an alarming degree, particularly among young people, showing the dire necessity for more liberal use of syrups, molasses and other sweets which has been recognized by the world's greatest scientists to be literally the great power behind the human effort that runs this busiest and most active of all ages.

Secretary George P. Williams was highly commended for his work on the new official Directory for 1930 for the United States and Canada, which has been recently published for free distribution by the National Syrup and Molasses Association. This Directory has proven to be a particularly handy desk reference for buyers, being indexed according to companies, having also a classified index as to various kinds of syrups and molasses, and likewise indexed as to the officers and representatives of the various companies. The Directory carries an annual mailing list of over 7,000.

Among other subjects discussed were State and Federal legislation affecting the industry equipment and raw material exchange, clearing house of labels, forestalling of unwholesome propaganda against sweets which, like other wholesome foods, are only harmful when their use is abused.

Division meetings included: Cane Syrup and Sorghum Division, Corn Syrup Division, Maple Division, and the Molasses Division, with discussions with reference to these divisions regarding prevailing stocks, markets, demand and general sales outlook.

In Machinery Hall

AS attractive as are the Grand Ballroom and the vast Machinery Hall for exhibition purposes, affording the exhibitors ample room, and with everything under the one roof, so that their prospective customers are not distracted nor taken away, "the boys" did not want to come back to Chicago, for the third time. But they are always good sports, and seemingly they did not lose by bowing gracefully to the wishes of the canners. It is the common report that they did quite good business in the way of orders this time. So here is another case where virtue had its reward.

And having decided to come back again, they did themselves proud in arranging their booths attractively, and making everything comfortable for the visitors. The Grand Ballroom is always a gem of beauty, and the comfortable booths, tastefully arranged, and with abundance of restful chairs and lounges, simply enticed the visitor to enter and tarry awhile. An exhibition of this kind is a mighty game of the spider and the fly, and so when the fly, in the person of a possible buyer, could be induced to enter the web, much of the game was already won. They felt so comfortable, and at home, that they "just naturally" wanted to talk business and to dispense good orders. And so both sides felt happy, the canners that they had gotten rid of their worries in buying their requirements, and the supply men in that they were getting good orders on their books. All in all, it is a very nice game.

On two previous occasions we have described these exhibition halls, shown photographs of them, and one year went to the expense and trouble of having hand-drawn etchings made of them. So there is no need to add to the flood of words in this big report, by telling again this twice-told tale. We will, then, go right to the job of "visiting" with some of the exhibitors. We will take them in alphabetical arrangement, because this prevents anyone from feeling that someone may have been preferred before him. So let's be on our journey:

American Can Company

THIS big and aggressive can supply source always adds a touch of the artistic to these exhibitions. Since the show went to Chicago, they have not been able to make a display of their wonderful can sealing and handling machinery, but they have made up for this by advertising canned products as the great food supply source of the world. Naturally they can show every shape, form and size of can used on any products in any section of the world, and this is exactly what they did in their exhibit. If this exhibit could be shown to the world, it would be the best advertising canned foods could have.

The full corps of the gentlemanly and everywhere popular officers and representatives of the American Can Company was on hand to greet friends from every section, to answer their problems, and take care of their wants and entertain them during the week. As hosts at the big party on Thursday night the task of seeing that everyone is cared for, friends, competitors, users and non-users, is a no inconsiderable undertaking. But they do it well always.

In his address to the industry on Thursday night, President Phelps of the American Can Company said they were willing and ready to take care of all business, but they urged caution on the part of all canners, and quality as an absolute essential for 1930.

GEORGE W. COBB
American Can Company.

Ayars Machine Company

OCCUPYING their usual position in the corner of Machinery Hall, the Ayars Machine Company, Salem, N. J., made an attractive and very interesting display of their extensively used canning machinery.

The new Perfection Pea and Bean Filler, through the excellence of its work and its absolute dependability is attracting more and more users every year, and naturally the demonstrators were kept busy showing this famous machine. A growing interest in canning whole grain corn forces attention to a new style filling machine for this operation, and this Perfection Filler lives up to its name for this purpose.

The Ayars Tomato Trimmer, Corer and Scalder working upon tomatoes caught the attention and the orders of all progressive tomato handlers. Likewise their beet machinery came in for added attention, since beets have become such a rapidly increasing pack. The company reports excellent business and we hint the advisability of taking up with them at an early date questions of any machinery you may need.

CHARLES AYARS
Ayars Machinery Company.

Associated Seed Growers, Inc.

THE industry now sees, and realizes better, the wisdom in the move of the big consolidation of well known seed houses represented in the Associated Seed Growers. On better acquaintance with this big and aggressive concern canners like it the better and it has stood them in good stead in the much sought for supplies of seed that may be depended upon. A concern like this can specialize upon a large scale and produce for the canners the sort of seed they are absolutely dependent upon. And the canning industry today needs this large size supply source.

As a result the popular representatives of this house found themselves constantly busy in their attractive booth in the big Ball Room, their chief difficulty being to distribute their wares so that all their friends and customers would be taken care of to the best advantage. They grow their own crops, sell their own seeds, and therefore, are not in position to stretch their supplies. President Arthur Clark reluctantly permitted his name to go before the Machinery and Supplies Association as Vice-President, because of the lack of time for other matters than his seed business. But his worth is recognized and his refusal would not be accepted. Just another evidence of the industry's recognition of the man and the job his company performs in this great and growing industry.

Berlin Chapman Company

THE Berlin Chapman Company, Berlin, Wis., exhibited their line of finely built canning machinery in Machinery Hall, and since this firm can supply an entire outfit or any single part thereof, every canner in attendance found an interest in this exhibit. Mr. Frank Chapman has gone extensively into the question of improving the methods of packing peas. His work in this line is all for the benefit of the canners, and they know it. He has developed and perfected a Quality Grader which he demonstrates is able to absolutely separate peas into grades of uniform quality. And pea canner will recognize the difficulty of this task, but the Quality Pea Separator has proved in factory operation its ability to do this job exactly as claimed for it. Quality pea separation is a different proposition to size separation, and it is quality which the market now wants. The big house did a land office business, but they have an immense factory capacity and the reputation of taking care of any business they promise to take care of. Here again, however, the canner who is in the need of additional machinery, in justice to himself and the company, should make his wants known early.

Bliss Can Making Machinery

THE E. W. Bliss Company, Brooklyn, always exhibit the latest type of Can Sealing and Can Making machinery, and this year had a very interesting exhibit in Machinery Hall. The Bliss-Pacific No. 81 High Speed Sealer, which has the reputation for tight cans and no jams, seems simple and neat in its operation and gives an evidence of the splendid mechanical finish which this firm is famous for.

They likewise exhibited Automatic Machinery for making cans of various shapes, all of the Bliss high quality production. Bliss machinery turns out annually millions of cans to be filled with food products of every kind. They will gladly answer any questions, submit catalogues and quote prices.

A Good String Bean Cutter

BURTON, COOK & CO., of Rome, N. Y., were not among the exhibitors, but since advertising in these pages is in itself an exhibit, the man who packs string beans will do well to visit their exhibit on another page. There he will find the improved Townsend String Bean Cutter. It speaks volumes for any machine which can stay in popular approval for 20 years as originally built as has this string bean cutter. But this year the company has put some improvements upon it that will appeal immediately to the experienced string bean canner. Have them give you details about this serviceable little machine and if you are wise you will get your orders in early and profit by the discount they offer to early buyers.

Cameron Can Making Machinery

THE Cameron Can Machinery Company of Chicago made an attractive exhibit in Machinery Hall, but their chief objective was to take interested parties to their immense plant located in the city. Here they had complete lines of the most up-to-date can making machinery in actual operation so

WILLIAM CAMERON
Cameron Can Machinery Company.

that the prospective user could not only see the machine, but the efficient manner in which it produced its work. The No. 51 Rotary Double Seamer naturally attracted most attention, for it appealed at once to the canners because of its compact work-

No. 307 TESTER

manlike appearance and the rapidity and neatness which it puts the tops on sealed cans. This year they brought out a new tester using air instead of water. This new machine is called the No. 307 Automatic Air and Vacuum Tester. The Cameron

Company has perfected the compressed air idea by placing the outside of the can under air pressure and inside under vacuum. The result is that a very slight leak, possibly not detectable in the older testers, causes a large movement of a diaphragm which is built into the can holder. This particular feature—i. e., the large movement caused by a minute leak, enables the machine to operate at the very high speed of 300 cans per minute. This machine is made in four sizes to accommodate different cans and will handle all shapes—round, square or oblong—and all makes of cans, cap hole as well as sanitary. Cameron's Automatic Can Making Machinery has won the approval of the most careful can making concerns. They work at high speed and with dependable accuracy. This firm also produces hand or power operated small Double Seamers that answer the requirements of the little canners and the home canner. It does just the same careful work as the big machine, and in fact brought the seaming of tops onto cans out of the cloud of mystery which surrounded it for so many years. It was thought that only the most expensive machine could possibly spin the tops on successfully. But these little machines, exactly the same in principle but operated by hand, do the work with entire satisfaction and the low cost puts them in reach of every user. They are also used in large canneries for "sample" packing, or in small experimental runs.

Continental Can Company

THE Continental Can Company with offices and factories practically everywhere, arranged their usual very tasty and attractive booth for the accommodation of their great host of friends and users. They have not displayed any of their famous can closing machines at any of these big Chicago meetings, but products and the splendid service of this big company are so well known that they need little more than the display

C. C. CONWAY, President
Continental Can Company.

such as they had to satisfy the visitors. The splendid corps of representatives from all sections of the country were on hand to greet their customers and look after their interests during the week.

President Conway is making a great reputation for the way in which he is building the business of this great company. Continental cans are made for every food product, plain and enameled, and their special line of lithographed tinware is constantly enlarging. There is nothing in this line which they cannot supply and they will be glad to figure with you.

Chisholm Ryder Viners

THE Chisholm Ryder Company, Niagara Falls, exhibited their model viner complete in its small scale in every detail of this famous viner. By this means the superior working ability of the machine was easily demonstrated and the fact that the machine can be regulated to meet the exact condition of the peas as they come in, is recognized by every careful pea canner as a valuable point in producing the quality now sought for.

S. M. Ryder, head of this company, was elected by the Canning Machinery Association to serve as President, and all who know him—and who does not—feel confident that he will fill the position with ability and honor.

Bottle Labelling Machinery

THE Edward Ermold Company, New York City, made their usual attractive exhibit in Machinery Hall showing the famous Ermold Labeller for affixing labels on bottles and other food products—labels of any kind and description, placed on any part of the package desired. It is claimed that a finer

W. A. GUTHRIE
Edw. Ermold Company.

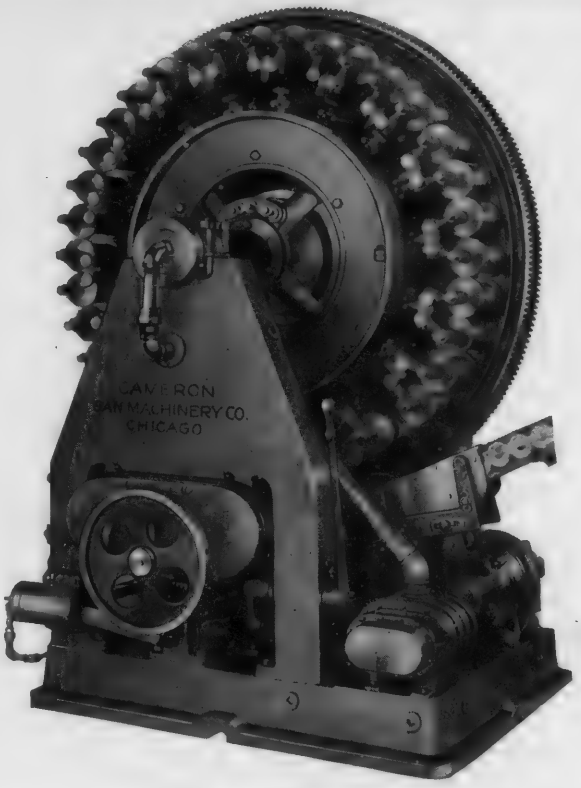
labeller has never been built for the purpose for which it is intended, and they back this claim up by performance. Their strong point is service and the glass package industry, and those who have special packages requiring special handling, know this from long experience. They will be glad to have your inquiries and to answer any of your puzzles in this matter of rapidly and carefully affixing labels to odd or regular shape packages.

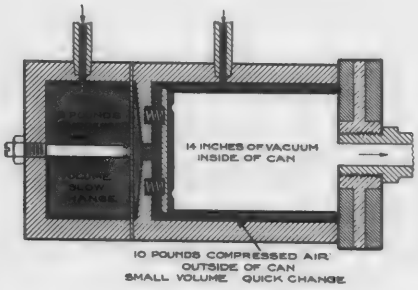
Cleaning Work Made Light

THE J. B. Ford Company of Wyandotte, Mich., are the makers of Wyandotte Cleaning Compound used on tables, machinery and other utensils in rapidly and efficiently removing all traces of food products and dirt. Every canner knows what this question of cleaning after the operation means, but only those who employed "Wyandotte" in this process know how much this work can be lightened and made more satisfactory. No canner who has ever employed Wyandotte in his cleaning operations would ever be without it and if you are one who has never tried it, we suggest that you write for samples. They have representatives in all sections of the country as most canning machinery supply houses handle this product.

Gallatin Valley Seed Peas

THE Gallatin Valley Seed Company of Bozeman, Mont., had their booth in the Foyer to the Grand Ball Room and Mr. Parker and others of the company were kept busy with the canners who sought a portion of their seed supply. These seeds grown in the far Western Galley Valley are famous for their quality and freedom from disease. The industry has come to recognize this so well that the company is having trouble keeping up with the demands. They report an unprecedented business at this year's convention.





THE CAMERON
307 Automatic Air and Vacuum Tester
(300 cans per minute)

This machine tests cans without immerson in water.

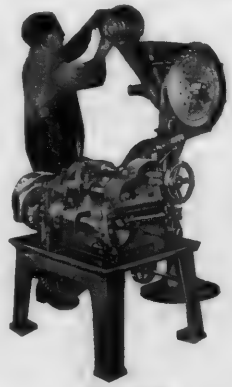
Saves Time—Space—Labor and Machinery

These four items are all "Cost Items". It saves can-drying and its operation is

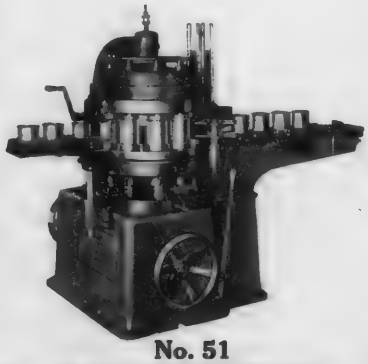
"Cameron Perfect"

EVERY MACHINE FOR CAN-MAKERS

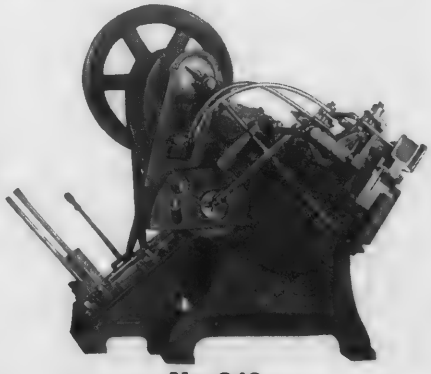
A machine for every operation regardless of size or style of can.



No. 46
Thread-Rolling Machine



No. 51
Rotary Double-Seamer



No. 248
Automatic Press

Cameron Can Machinery Co.

240 N. Ashland Ave. • • CHICAGO, U. S. A.

The Cameron
300 High Speed
Lock Seamer
[Body-maker for Sanitary Cans]

1900—50 can bodies per minute

1910—100 can bodies per minute

1920—200 can bodies per minute

1930—300 per minute

Note these 1930 features which make possible this high speed of operation.

Complete electric drive and control. Any mishap immediately operates switches which stop the machine before jamming.

The blank feed, operating from two magazines, results in slower reciprocating parts.

Two magazines allow the insertion of blanks farther ahead of the machines' demand.

This machine "rolls" each blank. This "breaking of the tin plate" produces smooth, attractive bodies, ideal for labelling. There are no wrinkles or slight imperfections in the convex surface.

Roller and ball bearings, automatically oiled.

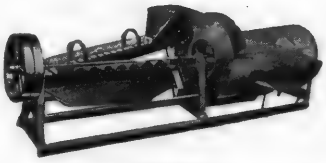
These, and other features, make possible the 300 can bodies per minute.

EVERY MACHINE FOR CAN MAKERS

Cameron Can Machinery Co.

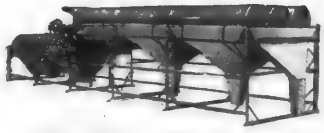
240 N. Ashland Ave. • • CHICAGO, U. S. A.

Concerning your P's Profit and Q's Quality



OLNEY
WASHER AND SEPARATOR
An amazing quality producer and a great labor saver

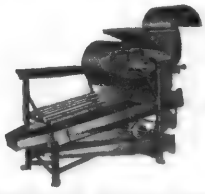
ELEVATOR BOOTS
Marvelous bucket loader that can't spill, jam, cut or split the tenderest peas



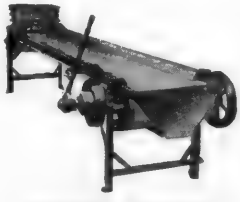
CHRISTEL PEA GRADER
Scientifically grades and re-grades, increasing yield of small peas. Assures bigger profits

CLEANER FAN
A quality builder for use on picking tables or washers

GOOSENECK CONVEYOR
Buckets interlock and never crush peas. Runs on rollers



FANWASH RE-CLEANER
The Cleaner Fan and our No. 2 Washer combined. Removes skins and splits



PICKING TABLES
Built for comfort and efficiency. It pays to buy good tables

AYARS PEA FILLER
The preferred "Perfection" Filler. Best pea filler made, bar none

BLANCHER
The last word in blanching efficiency. Uses every ounce of steam to advantage. Earns its extra cost over and over. Will outlive any Blancher made

Just a few of our complete line of profit and quality building machines are shown on this page.

Send for our new "Cyclopedia of Dependable Canning Equipment," the most complete canning catalog ever published, covering machines for all products and purposes. There is no obligation. Write for it today.

SPRAGUE-SELLS CORPORATION

308 West Washington Street, Chicago, Illinois

DIVISION OF

FOOD MACHINERY CORPORATION

Hamachek Viners

FRANK HAMACHEK, JR., of the Frank Hamachek Machine Company, Kewaunee, Wis., solved the problem of space by building a smaller viner to exhibit and show the points of superiority. These viners make the special claim of getting out practically all the peas from the vines and especially those smaller and delicate ones which are most sought for by the canners. On this account they claim heavy savings in the use of their machine, and results back up their claims.

FRANK HAMACHEK, Jr.

They have also improved their Viner Feeder, an important adjunct to every viner and they showed this and the work it can do. One of the little things which this company turns out is of material value to every user of Chain Belt Driven Machinery. This is their Chain Adjuster for drawing back into position the links. The necessity of this is apparent to every man who has ever gone through a canning season with chain drives. This company likewise makes a very efficient Ensilage Distributor and will be glad to send you full particulars. The company is celebrating this year its Golden Anniversary, which means that it has had the experience and knows the canners' difficulties and how to meet them.

The Hansen Line

THE Hansen Canning Machinery Corporation of Cedarburg, Wis., made a most attractive exhibit in Machinery Hall of their finely built and finely operating canners' machinery. Possibly the most attractive feature this year was the Hansen Whole Grain Corn Cutter. Western corn canners flocked about this machine and the good proportion of them parted with orders for it. Whole grain corn canning now being uppermost in many of their minds they are seeking a machine of this kind as the answer to the problem. But Hansen makes other canning machinery and mighty fine machinery. Their fillers, quality pea graders, kraut canning machinery and a long list of tried and proved machinery is at your disposal and it will be to your advantage to get particulars in time for this season's operations.

Reliable Fibre Containers

THE Hinde & Dauch Paper Company of Sandusky, Ohio, make their annual exhibit to the canners through the pages of The Canning Trade. A dependable corrugated shipping box is attractive to all canners because it saves in freight, and the manner of its sealing tends to lessen pilfering or damage in transit. H. & D. Boxes have long since earned the highest reputation for quality. They are not the cheapest, but they are the best and canners who expect to get quality in boxes should not expect to get bargains in prices. Submit your specifications to this big and aggressive house and they will gladly submit ways and means of caring for your requirements.

Heekin Can Company

THE Heekin Can Company of Cincinnati, Ohio, found it necessary to build a new and up-to-date factory, equipped with the latest and best machinery to keep up with their rapidly increasing business. Heekin Cans have not had the reputation of being good cans without good cause, and their situation in the heart of the Central West canning regions naturally attracts to them canners who realize the need of a constant reliable supply of fine cans. Heekin has made a specialty of responding in full to this demand and the growth of their business attests to the success of that effort.

R. J. INSKEEP
Heekin Can Company.

Heekin stresses service as well as quality and their customers and users heartily acknowledge this service.

Their popular representatives constantly entertained at their attractive booth in the big Ball Room and seemed very well pleased with Convention results.

The Huntley Line

THE Huntley Manufacturing Company of Brocton, N. Y., long famous as the makers of the "Monitor" line of canning machinery, had an attractive booth in Machinery Hall. Here they showed their latest improved String Bean Cutter, the Monitor Cherry Pitter and the Monitor line of blanchers used in every section of the country. President W. M. Buchholtz with his popular representatives were kept busy demonstrating and explaining their machinery. But a hint to the wise is to get in touch with them early and let them know your wants in time to be assured of the machine you desire. They have a tremendous, splendidly equipped plant, one of the models of the country, but it is not fair to them to expect to order a machine by wire and have it at your factory in the morning.

Knapp Labellers and Boxers

THE Fred H. Knapp Corporation, Ridgewood, N. J., made an attractive exhibit on the same spot they occupied last year. They had displayed here the famous Knapp Labeller used for many years by leading canners to affix labels rapidly, accurately and cleanly to cans ready for the Knapp Boxing Machine, or as they now call it, the Case Packer. Recently their consolidation with the National Sealing Equipment Corporation, adds a sealing machine to this line and makes it complete so that the operation moves through the warehouse from the stack through the labeller to the case packer, on to the box closing machine (where corrugated cases are employed) right into the car. That makes for efficiency and all of Knapp products breathe that element.

Now is the time to get details and particulars from this aggressive house and have them lighten your load in the warehouse handling of your goods.

QUALITY

TINPLATES

FOR —

VALUE
SERVICE
AND
SATISFACTION

ALWAYS —

INSIST UPON HAVING THE

ELYN

BRAND

AS MANUFACTURED BY

THE MELINGRIFFITH Co

LIMITED,
CARDIFF
ENGLAND.

PHONE-CARDIFF-514
CABLEGRAM
ELIN - CARDIFF

— CODES —
BENTLEYS
A·B·C·5TH EDITION

The New Sealing Ace

ONE of the new machines shown at this year's exhibition was the new Amsco Closing Machine, the Ace. This original can closing machine house offered this new machine as a real triumph, saying they believe it surpasses any single-head closing machine ever built. Having been the originators of Closing Machines, this statement is worthy of serious consideration, because they know. This ought to induce you to get details of this new member of their family.

In this exhibit they showed seamers for closing square cans and an automatic lining and drying unit for can makers. They report very good business, the industry being apparently well pleased with their offerings.

Metal Package Corporation

THE Metal Package Corporation, Baltimore, Md., had an attractive booth in the Grand Ball Room and everybody seemed to know just where it was and paid it frequent visits. Mr. S. Carle Cooling, General Manager of Sales, was Chairman of the big Dinner Dance, which attests to his popularity. The other popular representatives of this rapidly growing can supply house were kept busy entertaining their many friends and taking care of business. Metal Package has earned the reputation for making a good can and living up to its delivery promises. They make all styles of packers cans and a very extensive line of specialty goods and enameled tinware of every description. They are situated to take care of a wide territory with either rail or water shipment. They know the can business from the ground up, and the canners' requirements, and are prepared to take good care of any contracts entrusted to them.

CARL COOLING
Metal Package Corporation.

Dependable Field Baskets

THE Planters Manufacturing Co., Portsmouth, Va., adopted an up-to-date method of showing their products in the course of manufacture. Mr. O. W. French, the aggressive head of this rapidly growing concern, saw the need of a better than usual basket for Tomato growers and other canners' growers using such receptacles. He set about producing it and succeeded so well that many of the largest concerns in the business will use no other. In his booth this year he set up a moving-picture machine showing these baskets in the course of construction, and it is to the credit of this showing that some buyers changed their opinions and left their orders with him for carloads of these baskets. They report having done a very large business and it would, therefore, be to your advantage, if in the market for baskets, to get in touch with them early.

Kittredge Furnishes the Labels

R. J. KITTREDGE & CO., Chicago, are busy day and night turning out can labels for customers in every section of the country. It has been their calling for years and they know exactly how to take care of the canners' wants in quality labels and dependable delivery. These two latter considerations are all important, as you will fully realize when the time for shipment of your goods comes. Kittredge will gladly assist you in the building of the right sort of informative label, for their service is as pronounced as the quality of their production. If you did not visit them at their booth in the Grand Ball Room—see them now.

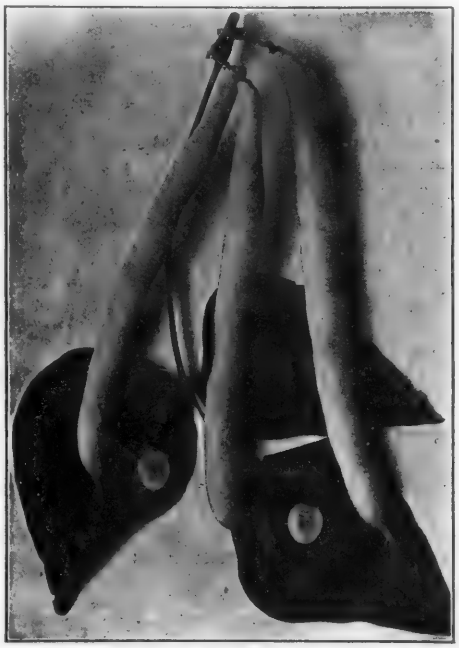
Rice Seeds

THE J. B. Rice Seed Co., Cambridge, N. Y., had a comfortable booth in the Grand Ball Room and displayed samples of their extensive line of famous Seeds for canners. This house has been growing Seed Stocks for the best canners in the business for years. They know what it means to carefully rogue and care for the seeds from the time of growing until in the hands of canners. Their production is on an enorhous scale, but with the demand as it is, even a house of this kind may be sold out before you get your order in. They are famous for their Seed Peas, Seed Corn and very famous for their Detroit Red Beet Seed. String Beans and other products hold a big position in their total business with the canners. Write them for what you may require and they will be glad to take care of you, if possible.

CHARLES P. GUELF
J. B. Rice Seed Company.

Phillips Can Company

THE Phillips Can Co., at Cambridge, Md., is a branch of the well-known Phillips Packing Co., a splendidly equipped, up-to-date can making plant that is supplying an increasing number of canners with their cans every year. This can plant is right in the heart of the Peninsula canning region, and, making a good can with delivery almost at their door, it stands to reason that many canners would see the advantage of placing their can business with them. The Phillips Canning Co. must have a can that gives complete satisfaction in their operations—for they are very large operations—and if the can is satisfactory to them, it undoubtedly would prove satisfactory to other canners. So this Peninsula can factory is growing and bids fair to continue to grow. A glimpse at the advertisement will show the extent of the plants embraced in this Company, and will give assurance to any one as to their ability to take care of any



NEW STRINGLESS KIDNEY WAX. The Most Popular Wax Bean Used by the Canning Industry.

YES WE HAVE SOME BEANS

Shipping Point: DETROIT, MICH.

BETTER SEEDS
FOR
BETTER PACKS

PEAS, BEANS, CORN,
TOMATO, BEET

All Seeds Required by the Pickling and Canning Industry

FOR SPRING SHIPMENT OR FUTURE CONTRACT

Correspondence Invited Catalogue on Request

JEROME B. RICE SEED CO.

Wholesale Seed Growers

CAMBRIDGE, NEW YORK

BRANCHES THROUGHOUT THE WEST

Are You Losing Money Buying Field Crates?

⅝ *FIELD HAMPER*

The five boxes on the left of the picture shown will hold five bushels or one hundred and sixty quarts of tomatoes. The eight ⅝ baskets on the right will hold one hundred and sixty quarts, same as the five boxes. The baskets take up one-seventh as much space as the boxes, weigh one-sixth as much and can be handled with one-tenth the effort. Hundreds of canners are using ⅝ baskets exclusively for handling tomatoes because they save time, labor, space and money.

Study the Picture on the Right and Decide For Yourself.

Write us for samples and prices.

Planters Manufacturing Company, Inc.

Portsmouth, Virginia

contracts they take on. But don't put the matter off until the last minute. Get in touch with them early.

They had an attractive booth in the big Ball Room and a constant crowd of friends about them. A political hint—it is rumored that Albanus Phillips, head of this Company, may run for the Governorship of Maryland.

Morral Brothers Exhibit

MORRAL BROTHERS exhibited the following machines at the machinery show:

They exhibited one of their Morral Double Huskers with rubber husking rolls and metal rehusking rolls, and one of their Double Huskers with all-metal rolls.

They exhibited one of their Corn Cutters with attachments for cutting whole-grain corn, and they also exhibited a knife-grinding machine for grinding knives for their corn cutter.

The Double Husker with rubber husking rolls and metal rehusking rolls is one of the Morral Brothers' older model huskers which has been in use for several years and has given very fine satisfaction. The Morral Double Husker with all-metal rolls is a new husker and was in use the past season in several factories, and has proved a great success. Some canners prefer the rubber rolls and some the metal rolls. The Morral Brothers are in position to furnish either kind of husking rolls.

The Morral Corn Cutter with whole-grain attachments is also a new machine. It was in use the past canning season in several factories, and it has given splendid satisfaction. It is made to cut the whole-grain corn and scrape the cob after the whole-grain kernels are removed, if desired. Morral Brothers showed samples of whole-grain corn cut with the Morral Whole-Grain Corn Cutter. The Morral Brothers Corn Huskers and Corn Cutter attracted a great deal of attention at the Canners' Convention.

Mr. S. E., and Mr. W. W. and Mr. O. G. Morral had charge of the exhibit.

The Oldest Seed House

D. LANDRETH SEED COMPANY, Bristol, Pa., very properly are proud of their long experience at growing fine seeds for gardeners and for canners.

They had an attractive booth in the Ball Room and these well known and popular representatives were busy caring for the wants of their many customers.

Recently they sent us one of their catalogues showing 146 years at this business of growing seeds, and all by the one family. At the back of this catalogue are three old advertisements; one in 1795 couched in the peculiar spelling used in those days and signed by David Landreth; another was dated 1808 in which David and Cuthbert Landreth offered their seeds and nursery stock. The third bore the date 1821 announcing the advent of the Landreth Seed Company into South Carolina. There Thomas Landreth appeared as agent offering the products of this house. With such experience they ought to know seeds, and they do, and that is why canners do not hesitate to place their business with this old and reputable house. But stocks are running low rapidly and to put your ordering off longer may leave you without the necessary seed. They will gladly quote and answer any questions.

The Hydro-Geared Pea Grader

THE Sinclair-Scott Co., Baltimore, Md., are possibly the oldest makers of Pea Grading machinery in the business, dating back to the beginning of the Viner and Pea Grading as a canning operation. Out of this experience they have developed what they call the Hydro-Geared Pea Separator, to the exclusion of all previous separators. This ought to be warranty enough for any thoughtful man, because unless the machine is superior to anything they put out heretofore, they would not offer it to the canners.

Write and get particulars on this real Pea Separator. We have not space here to go into details, but it is worth your while knowing this machine and they will gladly furnish you full details.

Morral Brothers, Exhibit.

Judge Syrupers

Positive Measure---High Speed---Non-Spill
Automatic Disc-feed

FOR

Syruping Fruits and for Liquid Filling

E. J. JUDGE

P. O. Box 238 ALAMEDA, CALIF.

Bargains in Used—

12 Valve A-B and Sprague-Sells Syrupers with drainers and disc-feed. Also—Sprague Universal Syrupers. Also—A-B and Price Drainers. Have machines for 8 oz. No. 2½ and No. 10 Cans. State size of can and will quote, subject to prior sale.

Gaylord Boxes

BETTER CORRUGATED AND SOLID FIBRE BOXES

ROBERT GAYLORD, INC.
GENERAL OFFICES ~ SAINT LOUIS~

NEW ORLEANS CORRUGATED BOX CO., INC.
TEXAS CORRUGATED BOX CO., INC.
GAYLORD CONTAINER CO.

Gaylord Liners

A New Labeller

THE Westminster Machine Works, Westminster, Md., had one of the new features of the entire show and a very attractive one—a new Labelling Machine. This firm has been making the Kyler Boxers for casing canned foods as they leave the Labeller for some years, and these Boxers rate very high in the opinion of the industry. A few years ago Mr. A. H. Kyler, who years ago used to be a Label Machine salesman, and is, therefore, long experienced in Labellers, conceived the idea

A. H. KYLER
Westminster Machine Company.

of a better Labelling machine, and built it. Before offering it to the industry he wanted to try it out in every possible manner, so that there would be no come-backs. At this year's Convention he introduced the finished machine, and we have heard from numerous quarters that it seems to answer every requirement. He calls it the Kyler Labeller and offers it with entirely new principles of operation: a Magnetic Label Feed, Circulating Lap-Paste System, Electrically Controlled Operation, quick label change, no smearing of paste or glue, greater speed, considerably less parts and as strong and durable and as efficient as the Kyler Boxer. The speed of the machine is anything desired; the simplicity of its operation catches the attention of any man familiar with this warehouse equipment. It was the center of an interested crowd most of the week, and if half the orders materialize that were promised, it will tax the capacity of the makers to produce the machines.

Write for details of this new and improved Labeller.

TUC Husker

THE United Company of Baltimore, in addition to operating a motor driven TUC Husker with different varieties of corn, gave a remarkable deconstration to show the reasons why its husking mechanism has proved to be indestructible in service, and why the TUC Husker has come to be regarded so highly by canners packing whole grain corn.

Buckets full of stones, bolts, wrenches, hammers, spark plugs, and other metallic substances were poured into the machine time and time again, and none of these left even a trace of having been run through the machine on any part of the mechanism.

Then raw tomatoes were cut in half and these were dumped into the machine, the husking mechanism having no effect whatever on this material.

It was explained that the reason why the tomatoes were not injured even in this condition was the same reason that the stones, etc., did not cause trouble. It was a practical illustration both of the reasons why none of the forty thousand TUC husking tumbler sections outstanding will have had to be replaced after five years' operation, and why the eliptical husking tumbling principle enables the speedier husking of corn without the breaking of grains.

In addition, a self-contained motor driven machine with the standard remote control electrical equipment furnished, as well as the flanged pulley provided for the belt driven machine also were exhibited.

Electrical counters of three different makes were operated from the machine, this equipment now being furnished as a standard part of TUC Husker.

***Tuc* Husker Exhibit**

SPEED UP FIELD WORK
WITH
SWING'S 5/8 HAMPERS

Economical manufacturing is best effected by using machinery and supplies that will do the job for which they are designed Best and Cheapest. Swing's § Bushel Tomato Hampers will start your Tomato Canning Operations right because each hamper is Machine Stitched and is Inspected so that Every One we deliver to our customers will do its job Best and Cheapest. Your inquiry will bring us to see you with samples.

Swing Brothers Inc., Ridgely, Md.

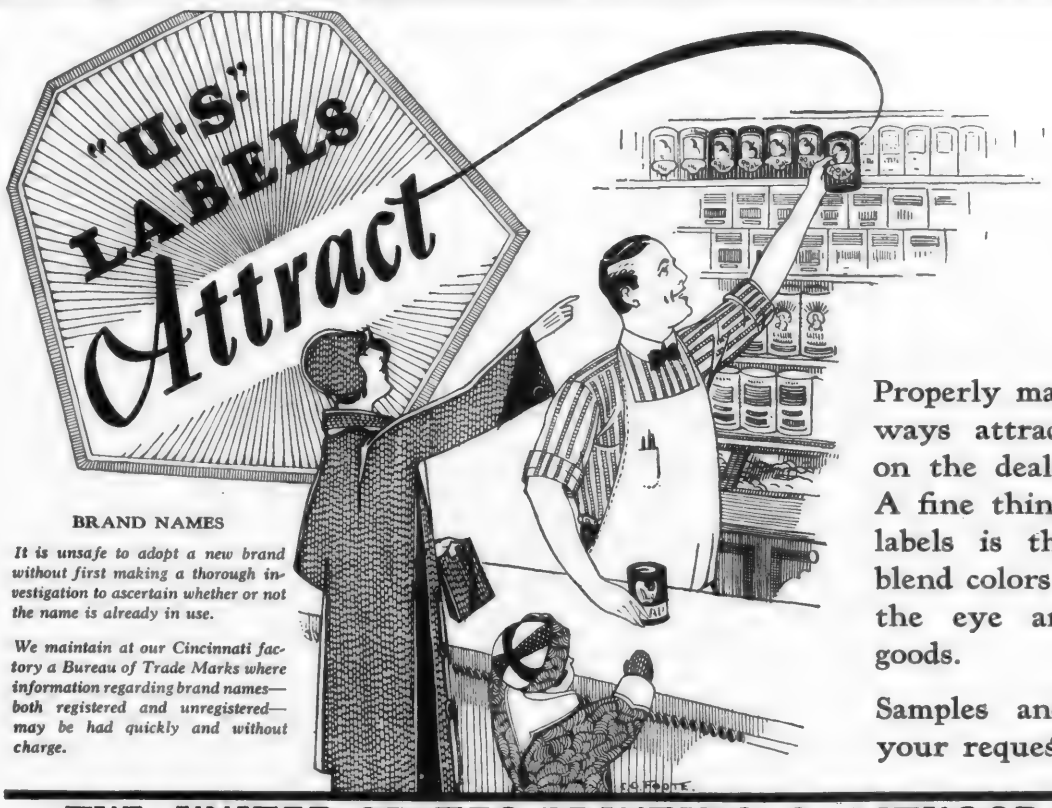
Coppersmiths

1720 Central Ave., Cincinnati, Ohio

Manufacturers of

Special Copper Coils and Tanks for Tomato Pulp
Copper Vacuum Pans - Steam Jacketed Kettles

Repairing, retinning **All branches of Coppersmithing**



BRAND NAMES

It is unsafe to adopt a new brand without first making a thorough investigation to ascertain whether or not the name is already in use.

We maintain at our Cincinnati factory a Bureau of Trade Marks where information regarding brand names—both registered and unregistered—may be had quickly and without charge.

Properly made labels always attract attention on the dealers' shelves. A fine thing about our labels is the way we blend colors that attract the eye and sell the goods.

Samples and prices at your request.

THE UNITED STATES PRINTING & LITHOGRAPH CO.

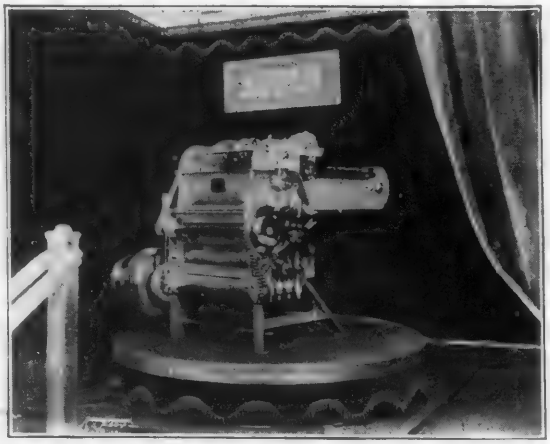
CINCINNATI 55 Beech St. | BROOKLYN, 98 N. 3rd St. | BALTIMORE 439 Cross St.

COLOR PRINTING HEADQUARTERS

ANDERSON-BARNGROVER MANUFACTURING CO.

SPRAGUE-SELLS CORPORATION
Division of
FOOD MACHINERY CORPORATION

THE combined exhibit of Anderson-Barngrover Manufacturing Co. and Sprague-Sells Corporation was constantly crowded with canners, who expressed great interest in the many new machines in their lines.



"THE HIGH SPOT OF THE SHOW"
One of the Unique Convention Exhibits, the Peerless Super Husker mounted on an elevated, slowly revolving platform

The outstanding feature of this exhibit was the Peerless Super Husker, with all its 1930 improvements and refinements. Something unusual for a canner's convention in the nature of a special Peerless Super Husker prominently displayed on a slowly-revolving platform was disclosed as "The High-Spot of the Show." An illustration of this special exhibit appears in this number, as well as photos of other sections of the entire A-B and Sprague-Sells exhibit.

General View of Combined Anderson-Barngrover and Sprague-Sells Exhibit

The Sprague-Sells line of whole grain corn canning equipment was also featured. More than half a million cases of whole grain or whole kernel corn was packed over Sprague-Sells equipment throughout the Middle West last corn season, and is in great demand. Practically all canners who have added whole grain lines are planning to expand their production in 1930 by installing more equipment of this type.

The celebrated Langsenkamp line of tomato pulp equipment was also combined with the above exhibit.

In addition many other standard machines for various products were shown in full size or by means of enlarged photographs. We are informed that all the latest models are covered in a new catalog fresh from the press, a copy of which may be had by any canner addressing an inquiry to Sprague-Sells Corporation, 308 West Washington St., Chicago, Illinois.

CANNERS FIRE INSURANCE

LANSING B. WARNER, INC., Chicago, operates what they term Canners Exchange Subscribers, which in effect is a canners mutual insurance company. The canner may have his property insured at a very considerable saving over what he would have to pay in the old line companies and yet with absolute safety. This insurance feature has been in effect more than 20 years. They have in force at present $158,264,683 worth of insurance and this past year returned to their subscribers an amount equal to 40 per cent of the old line costs. This yearly return, of course, is dependent on the amount of fire losses during any year, and 1929 proved to be very light in

this respect. We have never understood why any canner hesitated to place his insurance through this means. The leading canners employ it, or in other words are subscribers, and in the 22 years they have operated, they have paid promptly and without question the over $6,000,000 worth of losses. During that time they have saved the industry almost $7,000,000 in their insurance bill. This would seem to be a worth while proposition to any canner.

They maintained an attractive booth in the Foyer to the Grand Ball Room and were kept pretty constantly busy.

ROGERS BROTHERS SEEDS

THE Rogers Bros. Seed Co., of Chicago, has dwelt long and to the point on the fact that "Blood Tells" in Seeds as well as in humanity. They have proved beyond question the truth of this, and as a result demand for their Peas, and String Beans especially, has been growing every year. They maintain immense planting grounds in Idaho, where every pound of the Seed they supply to the canners is given the most careful attention. They grow their own Seed, know their own strains and offer the industry a product back of which they stand fully.

A NEW WASHER-ELEVATOR

THE Scott-Carmichael Washer-Elevator in the exhibit of the Scott Viner Co., again attracted a large amount of attention. This machine, which was shown for the first time last year, provides an entirely new method of washing and elevating fruits and vegetables. Designed originally as an elevator, it has, by the introduction of air into the elevating column of water, proved to be a most efficient washer.

Plants of the

PHILLIPS CAN COMPANY

Manufacturers of Packers Sanitary Cans

Division of the

PHILLIPS PACKING COMPANY

Packers of HIGH CLASS FOOD PRODUCTS

CAMBRIDGE, MARYLAND, U. S. A.

PHILLIPS SALES CO. Inc.,

BROKERS and COMMISSION

Canned Foods and Canners' Supplies

Located in the heart of Maryland's great packing industry.
Brokers and representatives desired in all markets.
Packers' accounts solicited.

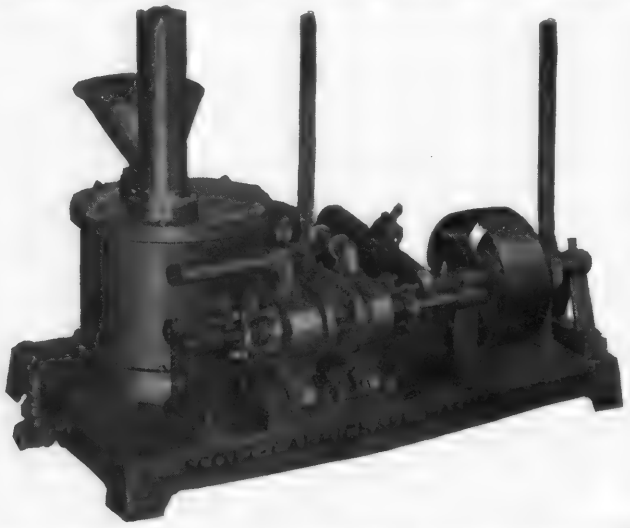
CAMBRIDGE, MD. U. S. A.

The National Color Printing Company, Inc.

LABELS

916-924 E. MONUMENT STREET BALTIMORE, MD.

Following the usual Scott policy, only a limited number of Washer-Elevators were sold in 1929. These machines gave perfect satisfaction, but, because of certain refinements and improvements, were all recalled and are being replaced, free of charge, to the canner, with new 1930 machines. The 1930 out-



put of these machines is now practically sold up, several additional machines going to canners who used them last year. W. E. Nicholoy and his assistants were kept constantly busy. Everybody knows "Thom" Scott, and keeps him so busy, in a social way, that he could not take orders if he wanted to.

A. K. Robins and Company

A. K. ROBINS & CO., INC., Baltimore, Md., made an attractive display at their booth in Machinery Hall. Genial "Bob" Sindall, after a strenuous but agreeable time conducting the Canned Foods Exchange Special Train from Baltimore to Chicago, was in attendance to meet his many friends and take care of their business. His right-hand man, and Vice-

R. A. SINDALL
A. K. Robins & Co., Inc.

President of the Company, Harry R. Stansbury, together with other popular representatives of this well known and famous house, were all kept busy and they report an immense amount of business put through.

A. K. Robins & Co. are the local agents for the Ayars Machine Co., in addition to an extensive line of their own manufacture. They can take care of all your wants in the machinery and supply line.

AMUSEMENTS

The Brokers' Annual Dinner

THE first set entertainment feature of the week in Chicago was the Brokers' Annual Dinner on Tuesday evening at 6 P. M., held in the Main Dining Room of Hotel Stevens, including all possibly over flow points. This dinner has become so popular that it taxes the capacity of any dining room to accommodate it, but Paul Fishback, the efficient Secretary of the National Brokers Association, is equal to the occasion. He has been manager of this big dinner and dance so long that he handles the crowd of 900 without the flicker of an eyelash and to the entire satisfaction of every one.

A dinner to 900 is quite a sizable affair, both for the Association and any Hotel where it is held. This year's measured up fully to the best that has yet been done.

The Stevens handles a banquet of this kind in truly wonderful fashion. The immense organization which operates this Hotel is so efficiently managed that they can put an affair of this kind on without a hitch and without the slightest appearance of delay or even the chilling of the viands as they are placed before the diners. Having satisfied the inner man—and woman—President Willis W. Johnson, the retiring President of the Brokers Association and acting as Toast Master, introduced Lieutenant Jack C. Richardson of the United States Naval Air Force. The Lieutenant described the trip around the world on the Graf Zeppelin to the interest of the entire assembly.

Next there was introduced Mr. Charles Milton Newcomb of Delaware, Ohio, who had the difficult task of living up to his menu reputation of a humorist. But he did it well and kept his audience in more than good humor.

Dancing was indulged in after the oratory, till the crowd grew tired.

The Annual Dinner Dance

AGAIN the Main Dining Room of the Hotel Stevens was filled to its utmost capacity to take care of the crowd which decided to attend and take part in the big Annual Dance of the Convention, given under the auspices of the Canning Machinery and Supplies Association. S. Carle Cooling, Master of Ceremonies and his Committee, induced the Hotel keepers to decorate the Dining Room in a specially attractive manner, and provided several acts of very high-class vaudeville, all of which were hugely enjoyed. These filled in between the courses and when the crowd was not busy dancing.

The dinner made a record this year as a success, and in fact it seemed that the majority could not get enough of it—we refer to the enjoyable occasion, not so much to the dinner itself—because they stayed almost until the time of the proverbial "Milk Man." Truly they "danced away the night."

Anchor Cap and Closure Dinner

DURING the last 20 years the Anchor Cap and Closure Corporation of Long Island City, makers of the famous cap for closing glass packages, etc., has made a practice of bringing all its representatives to the annual Convention and then together with all the customers it can reach, holds a big banquet and it is always a huge success. This year they assembled as they have since Chicago has entertained the Convention, at the Palmer House, occupying the Grand Ball Room for the occasion, because this banquet usually runs to about 600. This year was no exception and after a splendid dinner they were entertained by a high-class vaudeville which continued late into the night.

The Old Guards Rejuvenate

AS a matter of fact the first social event of the 1930 Convention took place on Sunday night, January 19th, in the assembling of the Old Guard Society for their annual festivities. Starting with a mere handful of men who were brave enough to face the "old" in the Guard, this Society has grown until today its membership stands at 177.

These assembled in the Ante-Room to the Tower Ball Room in the Hotel Stevens for a social reunion and then repaired to this Ball Room at 8 P. M. for the official banquet. And which "assembling" was strictly social and nothing more.

At the banquet the usual splendid dinner was served, but as one who ought to know says of it "it was dry as to liquid con-

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"Blood Tells"

Rogers Bros. Seed Co.

BREEDERS & GROWERS

CHICAGO, ILL.

PEAS—BEANS—SWEET CORN

sumption but was hilarious through the evening." During the banquet a high-class vaudeville entertainment was put on with many stunts, all of which helped to produce the hilarity above referred to. At the close of the dinner George W. Cobb, acting as Toast Master, again distributed Gold Emblems to the newly elected members who had served in the industry more than 30 years. These emblems are in the form of a small gold can and those who receive them always feel proud to wear them in the lapel of their coats. To those who had served between 20 and 30 years, similar emblems of Silver were awarded. It must be understood that no man who has been directly connected with the business less than 20 years is eligible to this Old Guard Society.

Harry Kronau, familiarly and lovingly known throughout the industry as "Pop" Kronau, representative of the Simpson & Doeller Company, Baltimore, was elected President for 1930. Sam G. Gorsline of the American Can Company Laboratories, Maywood, Ill., was re-elected Recording Secretary.

The American Can Company's Party

THE American Can Company has always desired one house large enough to invite the entire Convention as one big party, and this year they were able to realize their wish. The great Medinah Temple in Chicago afforded this opportunity and a little over. The stage is so tremendously large as to dwarf any individual or limited chorus in its attempt to entertain, or address, the audience. The company cannot be criticized for having much too much room this year, but that is the way the set up impressed most guests at this big American Can Party.

But as usual the company went to no end of expense to entertain their guests and make the evening enjoyable. The highest artists obtainable appeared to the complete enjoyment of every one present, and the evening was voted a tremendous success.

When C. E. Hume was elected President of the National Canners Association at Monday's Session, he had to tell the audience in the back of the comparatively small Convention Hall that he was standing up, for President Hume is one small but delectable California product. But when President Hume climbed upon the stage at Medinah Temple to express the thanks of the Convention for the entertainment, the audience had difficulty in keeping him spotted on the stage. President Hume is small in stature but mighty in intellect and ability and possesses to a high degree that inestimable virtue, humor. But it was no "joke" for a solitary individual to stand out on that mammoth stage.

President H. W. Phelps had this same ordeal to go through, but Mr. Phelps is a larger man, in some respects, than President Hume and he got away with it a little better.

Below we give the remarks of Mr. Phelps in full. After this one set piece of the evening, the guests were entertained with a buffet supper and dancing to their hearts content to the beautiful strains of the famous Lopez Orchestra, and they kept this up till the wee sma' hours.

In his address President of the American Can Company, H. W. Phelps, said:

"DON'T OVERPLAY A GOOD THING"

ADDRESS OF H. W. PHELPS

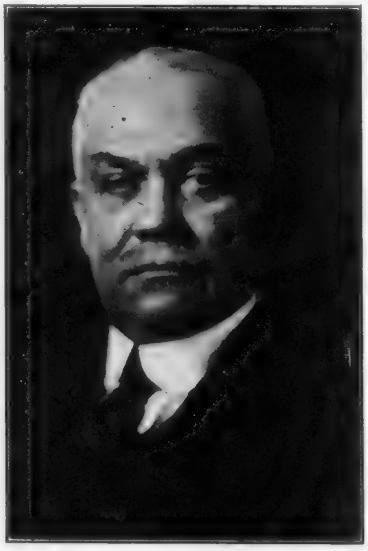
President of the American Can Company

NOT since I stood before a good many of you and a good many others who are not here tonight, in the Hippodrome in New York, have I seen you all together in one place, and it is a very inspiring sight to see one group representing one big industry, representing the wit and wisdom, the success, the hopes, the aspirations, the plans and the brains of the big canning institutions as well as the food brokers gathered in one place under one roof.

Ladies and gentlemen, it is a delightful thing to know that you are our guests. We welcome you tonight in this hall which is dedicated to things that I don't know anything about, but they must be lofty and noble because the surroundings are such, and because the men that I know who do know about these things are that kind of men. Therefore, under these auspices I believe we should have and are having a pleasant evening.

I don't know what I am going to say, but as I sometimes do, I will give advice. I don't know why I should, I don't know so much, but I have been around in this game for a good many years and I don't think that I ever addressed this audience when I was as much in doubt as I am tonight as to what I shall say.

Since the last convention in Chicago we have made a lot of history in this country, as you know. Not only have we lived 365 days, not only have we put up a good big pack, not only have we marketed most of it and made pretty good money on it, not only are we successful as canners in this industry, not only is the Peace Conference in session on the other side of the water, not only are all these things going on which are making history, but down in the little town where I live is a crooked little street that is called Wall. The things they are doing down there I don't suppose anybody in this audience knows about. I don't suppose there are very many of us who don't know what happened there and could happen again, but if you had a strip poker party you would find some scars, I haven't any doubt about it. I don't believe there is an industry in this country that has been less affected by that catastrophe that happened in Wall Street. I have seen signs of it in this industry. I don't believe that it curtailed the sale of canned foods at all; I don't believe that its shadow has had any effect, perhaps, on the plans for 1930; I don't believe that people are going to curtail their eating because of that thing, but at the same time, nothing of



H. W. PHELPS
President, American Can Company.

that kind could happen in this country without producing an effect. I am not going to try to analyze what it was any more than to say this to you: We are the biggest nation in this world, we are the richest nation in this world, we have more reasons than any other nation in the world to be successful, to be prosperous, and we have been, but do you know what we have done? We have overplayed it, we overplayed it woefully. We took a good thing which we had, we took the opportunities and the resources which we had, and we had them solidly and had a right to them, we could have kept them but we overplayed it. We built up on those resources a house of cards, paper profits, get-rich-quick, beat the world, you couldn't stop us. I don't know what all the slogans were, but up it went and up it went and up it went, and down it came. We overplayed a good thing. The whole world knows it, and at last we know it.

We have a good chance to come back. I hope the effect on legitimate business, and I mean legitimate business when I say that, will not be permanent; I hope it will not be very long in duration, but I know there is that effect. Conservatism, industry, hard work, careful planning, economy, will win. We will win thus in spite of the disaster. We can't win any other way.

I am not here to discuss the business situation or the financial situation. As we start in on 1930 the canning industry is in good shape, your markets are in good shape, your prices are satisfactory, your future is bright, you are likely to have no trouble in putting up a pack. Let's not overdo it. You have heard me say that before. I don't think I have ever been far wrong when I said it.

Here is the way I look at it: If this thing that has happened in financial circles is going to have an effect on business (which you can't see or I can't see yet because we are too close to it), if it is going to mean a recession in very many lines of business, if it is going to mean unemployment, if it is going to mean idle factories and all those things, it is going to mean less consumption of canned foods, it is going to mean a smaller market. Therefore, if there is a possibility of that (and far be it from me to be a prophet of evil and say that there is) you don't want to overpack this year. If, on the other hand, as I hope and believe will happen, we get back into our stride and we go ahead into 1930, if by the turn in the middle of 1930 we get back into shape and on our feet solidly again, the fact that you didn't

$6,220 IN PRIZES

AND THERE ARE 145 OF THEM

MAKE YOUR WINDOW WIN PRIZES

AND PRESTIGE; GET IN THE NATIONAL WINDOW DISPLAY CONTEST OF THE GLASS CONTAINER ASSOCIATION OF AMERICA

PRIZES . . . $1000 is the *Grand National Prize.* And there are 16 prizes for each of 9 sections of the United States . . . a first prize, in each section, of $200; a second of $100; a third of $50; a fourth of $50; a fifth of $25; a sixth of $25; a seventh of $25; an eighth of $25; and eight Honorable Mentions of $10 each. Worth while? . . . You'll have to dress your window anyway. Why not do a job that will work two ways for you? . . . Filled with an attractive display of products packed in glass, it is going to roll up the sales. It's going to make a strong bid for the big prizes. And it's going to win something that always means profits . . . and that's

PRESTIGE . . . because, to "Grade-A" customers (yours and your competitor's) the glass container has come to be the sign of the high-grade grocer. . . . With a window display of glassed products (between April 1 and May 15) you will show the buyers of your neighborhood that yours is a store where quality comes first. The Glass Container Association's striking color campaign in *The Saturday Evening Post* is going to make people look twice at grocery windows. For in these advertisements the public will be told that good grocers the country over are going to feature in their windows the many delicious foods that can be bought in glass.

HERE ARE THE CONDITIONS

1. The display must be installed in your window between April 1 and May 15, for a period of at least one week.
2. It must show a scope and variety of domestic foods packed in glass (regardless of brand) and *must* include at least (1) vegetables, (2) fruits, (3) meats or sea food, (4) beverages, and (5) condiments or jams, jellies and preserves.
3. All products shown must have been packed in the United States.
4. There are no restrictions as to color schemes or arrangements, if all the products shown are in glass containers.
5. Some place in the window, one or other of the slogans of the Glass Container Association of America must be displayed at least once. These are: (1) "Only the best can be packed in glass"; (2) "See what you buy—Buy in glass." They may be printed or painted in the manner which you think most effective in getting these messages across.
6. A photograph of the display (snap-shot will be sufficient) must be sent to Glass Container Association of America, 19 West 44th Street, New York City, N. Y., on or before midnight of May 15.
7. On the back of the photograph the name and address of your store must be clearly printed, together with the owner's name and the dates of the period during which the display was in your window. If some jobber's or packer's salesman helped you with your display and you would like to give him credit, it would be to his advantage if you put his name, together with that of his firm, on the back of the photograph. But be sure to credit only one man. To credit a salesman is not a compulsory condition of the contest, but we would appreciate your co-operation.

Here are the judges

EUGENE S. BERTHIAUME, *President*
National Association of Retail Grocers
THOMAS F. BRANHAM, *President*
National Wholesale Grocers Ass'n of the United States
J. H. MCLAURIN, *President*
American Wholesale Grocers Association
GODFREY M. LEBHAR, *Editor-in-Chief*
Chain Store Age
P. I. HEUISLER, *President*
Glass Container Association of America

16 PRIZES FOR EACH SECTION

1 Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut

2 New York, New Jersey, Pennsylvania

3 Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida

4 Ohio, Indiana, Illinois, Michigan, Wisconsin

5 Kentucky, Tennessee, Mississippi, Alabama

6 Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas

7 Arkansas, Louisiana, Texas, Oklahoma

8 Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada

9 Washington, Oregon, California

have such a big pack this year is going to put your marketing in fine shape to start in on 1931.

I want to sell cans, yes, but I don't want to sell too many cans. I don't want to sell one can that can't be sold to somebody else and get off his hands. If I were to say what I feel I would say that the danger, if there is one, in 1930 is the danger of an overpack. I see every reason against it, I see no good reason for it. My slogan tonight then would be, "Don't overplay a good thing." We did that and you saw the results, if you do it again you will see the same results. Therefore, if I have any word to say tonight (and it takes a lot of gall to get up here and assume the right to offer advice to a company such as this), my earnest plea would be: Don't overdo it this year.

Get ready for 1931. Then if conditions are right, and I hope and pray they will be, you can go forward with certainty.

But we aren't out of the woods yet. I don't believe that if the bankers of this country were lined up behind me tonight they would take any issue with what I say when I say to you that we aren't out of the woods yet. We are headed out, we can get out by earnest hard work, conservatism and economy. That is the thing for us to do. Earnestly and honestly let us go ahead as far as we can with conservatism and economy and get ready for 1931. If I am alive then and conditions are as I hope they will be, I should like to stand before you once again and simply say, "Go to it and pack your heads off," but I can't say it now. (Applause.)

Winners of the Automobiles

THERE was not much said previous to the assembling of the Convention in Chicago about any automobiles that were to be awarded as door prizes or to the lucky canner who held the right number, because although there is not a question of a cent in a lottery of this kind—in other words, no one has to buy a ticket or otherwise, but every canner who choses to register is assigned a number in order and this number on the final day of reckoning goes into a huge drum along with all others, and lucky the man whose number happens to come out when the drawing is made. Because this year the first winner received a very handsome Buick car. The lucky number was 1,232 and proved to be M. W. Jones, of the Iowa Canning Co., Vinton, Iowa. Mr. Jones probably has more dollars than Henry Ford ever made automobiles, but it shows that Dame Luck has no respects for purses. It should be noted also that since the Canning Machinery and Supplies Association began offering these free cars this is the first time the President or head man or even a high official in any canning company ever won the car.

The second car, a beautiful Marquette, was won by No. 3,233. Mr. H. J. Diedrich, of the Klind-Geiger Canning Co., Cassville, Wis., claimed the number and took the car. Records were being smashed rapidly, for here was the second canner to drive off one of these handsome free gifts.

We congratulate the winners and we particularly congratulate the Canning Machinery and Supplies Association for its wonderful generosity.

Canned Foods Exchange Special Train

THERE was not much heard this year about special trains to the Chicago Convention, but the Baltimore Canned Foods Exchange would not be detered by that lack. It arranged with the Baltimore and Ohio Railroad to run a second section of the famous Capitol Limited as a special train for Conventionites only, and as usual the response was enthusiastic.

The Baltimore and Ohio Railroad appreciating the splendid business coming from the canning industry of this section during the year, goes out of its way to be nice at such times, and we can assure it the industry appreciates the thoughtfulness. They equipped this special train with the best at their disposal, and that is equivalent to saying the best in the country. It was an all-Pullman train in charge of a specially selected crew and everything moved on it with that thoughtfulness and precision which apparently only the Baltimore and Ohio is capable of producing.

About 135 journeyed to Chicago and every one was enthusiastic over the splendid way in which they were treated.

They ran another special train home, using the same equipment and receiving the same fine service and careful attention. Not quite so many came home with them.

R. A. ("Bob") Sindall was Chairman of the arrangements and Mr. R. E. Lohman, Baltimore City Passenger Agent accompanied the train, and with him were Mr. L. A. Watkins, Freight Agent at Henderson's Wharf, Baltimore, and Mr. John B. Wilkes, Freight Representative of the road.

Public Sale

We will offer on the premises the following

Very Desirable Corn and Tomato Properties

FREDERICKTOWN, MD. (near Galena)
TUESDAY, FEBRUARY 18, 1930,
at 2 P. M.

All the lands and buildings, wharf and water rights pertaining thereto described in deed from James E. Woodall and wife to Silver Canneries, Inc., and conveyed by them to Charles B. Silver, Trustee, January 12, 1929, and recorded among the records of Cecil County, S. R. A. No. 7, Folio 71.

Also all the land and buildings thereon, described in deed from Irvin T. Kepler and wife to Charles B. Silver, Trustee, dated May 11, 1929, and recorded among the records of Cecil County, S. R. A. No. 7, Folio 128.

Also all right, title and interest in ten-year lease at $75.00 rental per annum, dated December 29, 1922, from Catherine R. Wilson to Silver Canneries, Inc., and assigned by them January 12, 1929, to Charles B. Silver, Trustee, and recorded among the records of Cecil County, S. R. A. No. 7, Folio 71.

Together with Factory, Warehouses, Superintendent's House, Operators' Quarters and Office, located on Sassafras River, wharf at door and three miles to railroad by pike; ample land and large storage facilities; plenty of water; finely equipped for packing either crushed or whole grain corn, or both, with two boilers, capacity 160 H. P.; two Engines, capacity 30 H. P.; Corn Brusher, Morral Cutters, Silker, Mixer, Cooker Filler, eight Closed Kettles and Cooling Tank.

The Dump Scales, Husking Machines and Conveyors, installed in 1929, are reserved, but will be sold to purchaser at cost.

The factory has a capacity of 2,500 cases per day, and being located at Fredericktown, on the Sassafras River, opposite Georgetown and only about a mile from Galena and Cecilton, draws local help from each.

This property occupies a key position for packing corn, as it drains all that wonderful fertile land lying between the Sassafras and Bohemia Rivers and extending into Delaware by pike to Middletown and all the territory around Galena, one of the most fertile sections in the State, with pikes running in every direction.

LAMBSON, MD. (near Galena)
TUESDAY, FEBRUARY 18, 1930,
at 3 P. M.

Canning Factory situated on lands of Pennsylvania Railroad at Lambson Station, conveyed by Arthur M. Mahan to Wm. Silver & Co., Inc., June 12, 1915, and recorded in Kent County, Liber J. T. D. No. 4, Folio No. 454, etc., and by them to Charles B. Silver Trustee, and recorded in Kent County, Liber J. T. D. No. 4, Folio 455, etc.

Also all right, title and interest in Lease from Addie M. and N. L. Riggin to Wm. Silver & Co., Inc., dated July 31, 1926, for five years, with renewal privilege for like term at $1,500 per year.

Ware Room 130x40 feet, Work Room 60x30 feet, Shed 30x30, cement floor, ample quarters for help, Scales, Office and other Outbuildings; two Boilers, one 70-H. P. Vertical, one 50-H. P. Vertical, one 15-H. P. Horizontal Engine, one 6-H. P. Vertical Engine, one Steam Hoist, three Large Process Kettles in use, one Extra, one Tomato Scalder, one Exhaust Box, one Packing Table, five Peeling Tables, 106 ft. Well and Myers Pump, splendid water.

Located in fine tomato and corn country; ample tomato acreage immediately surrounding.

TERMS—Cash or Approved Security.

W. W. LEE, Auctioneer.

WM. SILVER & CO., INC., *Agents,*
Aberdeen, Md.

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HIGH SPEED-NO JAMS-TIGHT CANS

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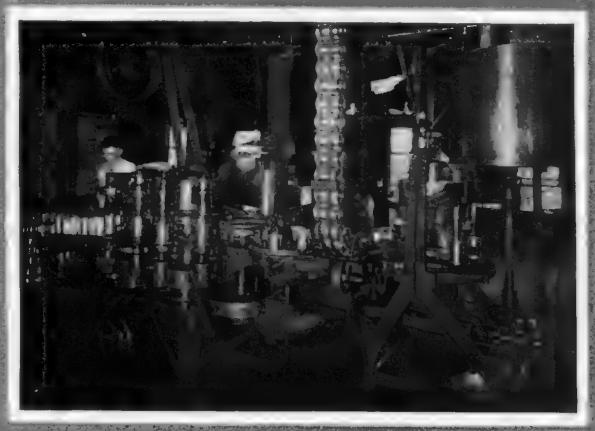
Let us show you why you also should use only this machine.



E. W. BLISS CO.
BROOKLYN, N. Y., U. S. A.

BLISS *for* MACHINERY

BLISS

HIGH SPEED AUTOMATIC CAN MAKING MACHINERY

Bliss Automatic Can Making Machinery is the product of over half a century of experience, accumulated knowledge and continuous improvement.

It is built for permanence and combines the essential qualities of correct design, substantial construction, absolute dependability and highest possible speed.

It is backed up by the sincere personal pride of the manufacturer in the lasting satisfaction it gives in service.

Ask any can maker.

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BLISS *for* MACHINERY

To Merge
or
Not to Merge

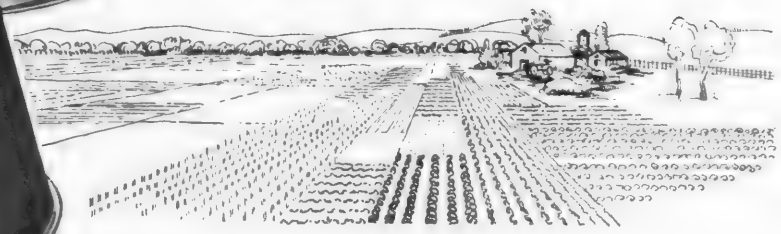
As a guide to the answer to this question, a member of our staff has prepared a short history of consolidations in the field of industry. The article points out the possible advantages and disadvantages of such combines, and presents a summary of the views of some of the leaders in the food packing industry.

A copy of this article will be sent on request.

Albert T. Bacon & Co.

Public Accountants & Auditors
208 S. La Salle St.
Chicago, Ill.

CANNERS OF 1930



WE are constantly adding old-established Canners to our list of customer-friends. They realize the benefits derived from placing their can requirements in our hands. There *is* a reason . . . and our representatives will be glad to explain it to you.

BOYLE CANS

. . . reflect the intimate knowledge which years of Cannery contacts afford.

Personalized service has brought us an ever-increasing clientele . . . customer-friends . . . all.

METAL PACKAGE CORPORATION
. . . . Boyle Plant . . .
811 S. Wolfe St., Baltimore, Md.

THE CANNING TRADE

THE JOURNAL of the CANNING and ALLIED INDUSTRIES

Established 1878

THE CANNING TRADE is the *only* paper published exclusively in the interest of the *Canned Food Packers* of the United States and Canada. Now in its fifty-second year.

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Packers are invited and requested to use the columns of THE CANNING TRADE for inquiries and discussions among themselves on all matters pertaining to their business.

Business communications from all sections are desired, but anonymous letters will be ignored.

ARTHUR I. JUDGE,
EDITOR.

Vol. 52 BALTIMORE, FEBRUARY 17, 1930 No. 27

WEEKLY REVIEW

Market Disappointing—Buying Lags in Sympathy With General Business—Tomatoes Cleaning Up—Corn Stocks Low—Peas Better Cleaned Up Than for Years.

THIS ISSUE—With all the tremendous amount of splendid material given in this issue, the numerous opportunities it affords for comments and discussion, it was very hard to refrain from breaking out, editorially, and having our say in the melee. But it would be almost criminal to add more words to the flood of words here given, and so there is no usual editorial. In fact, we have denied ourselves the pleasure of a general comment upon the Convention, and of that always pleasant job of writing briefs and comments upon the happenings at the Convention, and which we usually give under the heading, "Conventionalities." Enough is enough, and we do not wish to "rub it in" on our readers.

Here you have the whole story, without the elimination of a single word, and of all the meetings, all the sections and of all the associations which met at Chicago, the Pickle Packers excepted, and their report is now in hand, after all the other forms have gone to press, and so it must wait. The reason for this delay is that they make their own report. Our reporters would have furnished us the copy, along with all the other, if they had been handling it. This is not said as a reflection upon the Pickle Packers, but as an explanation, and to acknowledge to this extent that this report is not "complete," in case anyone cares to be meticulous about that particular point. Otherwise it is complete.

Here is the finest kind of a canners' school, which everyone in the industry should study and put aside for careful review and frequent rereading. There is a wealth of valuable material in this issue.

THE MARKET—The general canned foods market has not acted, since the close of the Convention, as everyone thought it would. The stage was set for a heavy buying period of spots, first because nearly all distributors' stocks are at low ebb; that was shown by inventories at the first of the year, and secondly because all dealers knew that spot stocks of canned foods in first hands were at low ebb, and likely to be all cleaned out in many lines. These facts should have forced the market to high levels. But the expected has not happened. There has been buying, and buying is going on now, but in no way resembling what was expected. The number of buyers, taking them all over, is immense, but they are taking the smallest possible amounts, as a rule, and the market has not felt the effects expected. The remaining stocks are being depleted without affecting the market prices materially. If the buyers had aimed to do this, so as to hold the markets against advances, we would have to admit a masterly piece of work. But there was not a semblance of concerted effort, and there is no credit due anyone. Each individual was forced, or of his own will decided, to buy just as little as he could possibly get by with, and the result took care of itself. This sort of worse than hand-to-mouth buying is not peculiar to the canned foods line, nor to the food distributors; it is painfully evident in every line of business. As a matter of fact, canned foods are suffering in sympathy with general business, and through no fault of their own. This was the one feature about 1930 operations in canned foods which was uncertain, as we pointed out sometime ago. If canned foods, of themselves, could go through the market without influence from other lines of business, the canned foods industry would be booming along at the top. Their popularity with the people and the condition of the visible spot supplies warrant this. Buyers, of course, are stirring up a smoke screen on futures, saying that the 1930 packs will all be badly overdone, and next fall will see below-cost prices on all goods. That is all pure bunk, so far as anything definite or dependable is concerned, because nobody can say what kind of a growing season we will have, or what the yields of crops will be when canning time rolls around. It is just 100 per cent buyer's argument to get the prices down. But there is serious consideration due to the question as to what general business conditions will be throughout the whole country during 1930. Certainly we did not expect these to affect canned foods prices this early in the year. The effect, if any, was looked for in the fall, when the packs had been completed. This little flurry will probably do the business good, in making it exercise caution in preparations for the 1930 season. If every other line of business sees the necessity of great caution, the canners must see it also and prepare upon that basis. A moderate acreage, a moderate pack of high quality, are the inescapable dictum of present-day business. If you bear that in mind you will have no regrets when you come to close your books at the end of this very eventful and uncertain year of 1930.

The question of spot goods on hand is of no consequence; you will get rid of all of these long before new canning time, and at good, profit-showing prices, if you have the backbone to demand and stick for them; but how to proceed for the 1930 packs is a troublesome question, and it is our advice to go carefully, moderately and on a quality basis.

Tomatoes—Buyers have been scouting through the West, especially in the Ozarks, for any tomatoes to be found, and they have cleaned out many more canners in that region. Supplies there are at low ebb. Just how bad the situation is, is shown by the fact that dealers in Chicago have turned to imported tomatoes to supply their wants. And don't forget that these imported tomatoes cost a whole lot more than the domestic.

The Tri-States have also been combed over for any goods easy to get. Holders have stiffened up a little in the prices, and no sales were made this week below $1 for standard 2s. Purchases naturally are in small lots, from 25 cases up, because anything like sizeable blocks are hard to find. But there have been some sales of from 2,000 to 3,000 cases, and it is to be noted that these were at full market prices.

No. 10s continued to go out at $4.50. When they begin to jump they will jump rapidly.

Corn—There has been more business transacted in this section in future Shoepeg corn than in spots corn. This is not surprising, because spot corn is not plentiful in this region, as it is not also in the West. Recent figures on spot Tri-State holdings of canned corn show just about 100,000 cases of all kinds, about evenly divided between Shoepeg and cream style. Just a little flurry would clean that out in a jiffy, and holders are not worried. It is said that there are not a million cases of canned corn in first hands in the country, and when you consider that there remain the best consuming months of the whole year, it can be seen that corn is in a stronger position than ever before. But the market holds around $1 for standard crushed corn, here and in the West.

They have sold future standard Shoepeg corn at $1.10, extra standard at $1.12½ and fancy at $1.20, presenting, we take it, valentines to their good friends the buyers. So far nearly all futures have been of Shoepeg corn, the buyers recognizing the bargains.

We are told that a careful summary of the intended acreage of sweet corn in this section for 1930 promises about the same acreage as in 1929.

Peas—Peas have sold fairly well during the past week, but stocks in canners' hands have worked down so low that sales must be slow from now on. A reliable report says there are less than 15,000 cases of peas of all kinds now held by canners in this Tri-State section. Spot peas, everywhere, are getting into an alarming position, for New York State and Wisconsin are better cleaned out than they ever were before, and promise to be all cleaned up before new packing time. No pea canner ought ever "kick" about the quoted market on canned peas. We saw one sale of a fair-size block of No. 3 sieve peas, standard, sell at $1, while another smaller lot of No. 4 sieve standards sold at $1.05. That is just a sample that can be duplicated all over the country and at any time of the year, and yet the market reviewer is supposed to find "the market on canned peas." There ain't no sich thing! It is a case of everybody for himself and the devil take the hindmost.

Beans—There seems to be some concern about stringless beans, though the market is holding well around $1 for standard cut. But when demand slows down then one hears about some poor qualities packed by new canners at this game, etc., etc. The surprising thing is that, considering the rush into string bean canning, there was not more poor stuff turned out. For a bunch of beginners the bean canners about set a record. Of course, there were some poor beans put out, every canner has to "cut his eye teeth," but the amount was relatively small. Good string beans are not easy to can rightly and successfully. If you feel cocky about your first year's attempt, you had better look lest you are about to fall. If they were as easy to can as they would seem to be, there would be double or treble the pack put up every year, because the only thing that will stop a string bean plant from producing is Mexican beetle, and now they have found out how to stop his work. They may be sorry they did.

Futures—In a general way West and East futures have opened about as follows: Tomatoes—50c to 60c for 1s, 80c to 90c for 2s, $1.10 to $1.20 for 2½s, $1.25 to $1.35 for 3s, and 10s in or about $4.

Corn—Shoepeg 1s, fancy, 80c; cream style, 60 to 65c; 2s, cream style, 80c to 90c; with a whole raft of whole grain and special packing, differing varieties that make corn quotations worse than peas. This special can size question has gone crazy and it will not help general canning foods consumption.

NEW YORK MARKET

By "New York Stater,"
Special Correspondent "The Canning Trade."

Canners Holding Firm in Face of Small-Lot Buying—Tomatoes Strong—Canned Fish Firm—Maine Quotes Future Corn Prices—California Quotes Future Tomato Prices—Taking Canned Corn—Shrimp in Good Demand—Spinach Steady.

New York, February 13, 1930.

THE MARKET—The present buying tactics of operators in this market indicate that the remaining stocks of canned foods will be wiped out in small lot buying, and that this spasmodic operating will replace the customary large buying expected at this time. There are several reasons for this, the chief one being that many wholesalers here find themselves financially unable to act on their usual active basis, and must confine themselves to immediate needs. However, the net result will be the same. From reports being received here from canning centers first hands are determined to get their prices for their remaining stocks, whether they are taken in large or small lots. They are basicly justified in their standard, as the remaining stocks fall far short of meeting requirements, and no matter in what small lots they move their goods, they can do so at good prices. There has been practically no activity in futures during the past week, aside from inquiries sent forth from here sounding out the feelings of the canning interests. A very steady undertone persists in all canned foods, with tomatoes in the lead. The fish packs are strong, with stocks, especially in shrimp, much smaller than anticipated. California asparagus is closely sold up, and varied assortments are scarce in first hands.

New pack California spinach prices will be named shortly, and meanwhile prices on the 1929 pack are very strong. Maine canners have named opening prices on corn, quoting $1.25 for No. 2 Crosby, $1.30 for No. 2 Bantam, and $6.50 for Crosby 10s. Canned fruits are comparatively quiet, with trading in futures not yet under way. There have been a few offerings here of future Northwest loganberries and raspberries at prices showing slight advances over the 1929 levels. Several packers are offering at unchanged levels. However, there has been little actual buying interest displayed.

Southern Tomatoes—With practically all of the remaining 1929 tomato pack being held in the Tri-States, all buying interest is directed in that direction. Spot goods are in good call, but in small lots only. Operators, while paying the higher prices without discussion, do not seem to be going ahead with the usual confidence, or else are lacking the cash to do so. They know that remaining stocks are seriously depleted, but nevertheless are not taking large shipments. They are confining their purchases to fill their own customers' immediate needs. It is now conceded that the 1929 pack will be thoroughly exhausted before the 1930 pack is available for distribution. Prices, while quoting is uncertain, due to almost daily variations, continue practically unchanged, with standard 2s at $1 and up, f. o. b. factory. A California packer has announced opening prices on 1930 pack tomatoes, with 2½ standards, at $1.05, and 10s at $3.25, f. o. b. steamer, California. While prices on future Southerns are not generally available, a few quotations indicate that the canners are going to follow their usual routine system of naming low prices. This is shown in a list giving prices at 52½c for standard 1s, 80c for 2s, $1.15 for 2½s and $1.20 for 3s, all f. o. b. factory.

Corn—Spot business in canned corn has been satisfactory during the past week, with buyers operating in small lots, but freely. Prices are very strong. There was little doing in the way of futures, although some prices have already been named. Maine canners have issued opening prices with Crosby No. 2s listed at $1.25 and 10s at $6.50. No. 2 Bantam is posted at $1.30.

Shrimp—This canned fish product is in very strong demand, and prices are tightening appreciably. Stocke are found to be considerably lighter than generally thought, and buyers are therefore scurrying about trying to cover their immediate and nearby needs. Incidentally, wholesalers are taking on shrimp futures much more freely than they are other canned foods.

Asparagus—California asparagus canners are in a very comfortable position with the 1929 pack sold up and with prices steady with a marked upward tendency. Packers already lack full assortments, and all signs indicate that floors will be clean by the time the packing of the 1930 crop gets under way.

Spinach—Continued steadiness marks this market with the 1929 pack almost exhausted, as far as California packers are concerned. They are preparing their prices for the 1930 pack, which will be received here within a few weeks.

Salmon—This division of the canned foods market has remained fairly quiet this week, with a few West Coast canners showing some willingness to grant concessions to move stocks of pinks and chuns whose quality is not considered exactly up to par. However, potential demand is strong for salmon, and there is little occasion to expect any weakening change in prices.

—Since 1913— Reference: National Bank of Baltimore
CANNED FOODS BROKERS COMMISSION MERCHANTS
Howard E. Jones & Co., Inc.
200-202 E. Lombard St. at Calvert St., Baltimore, Md.

CHICAGO MARKET

By "Observer"
Special Correspondent of "The Canning Trade"

Seasonable Headway Reported Among Sellers—Markets Generally Getting Pretty Well Cleaned Up—Cold Weather in the South Has Stopped the Talk of Early Tomatoes from That District.

Chicago, February 11, 1390.

SEASONABLE headway is reported among sellers in all lines of canned foods. Jobbers are finding their trade inclined to support futures in a reasonable conservative way, and this is in turn reflected by some jobber contracts now being placed judiciously with their well-tried old canner friends.

New packers are having a hard time cutting in on much business thus far.

Markets are generally getting quite well cleaned up and most new crop items will be delivered onto a bare market with a very few exceptions. Not in many years has the entire cannery pack reached the consuming public so completely as will be the case this spring.

Tomatoes—Supplies hard to find, very few canners with any stocks at this time. The cold weather in the South has squelched the talk of early tomatoes from that district, and owners of good tomatoes are in position to name their own price anywhere within or even slightly above reason.

Grocers generally are starting to hoard what few cans they will have, and if this continues with everybody consumers may become discouraged and kick back on price occur before next crop. It will not be the seasoned operators, however, who will get hurt; they all know the sensible limits which tomatoes can stand, and when that level is approached they clean up.

Corn—Prices unchanged, but interest good. Many buyers find their stocks running unexpectedly low, and there are reports of very frequent sales; most of these represent three to six weeks need of buyers, so that there will be an increasing number of buyers as spring approaches.

Peas—This week has revealed an almost complete clean-up of standards in Wisconsin, and late comers are finding practically no supplies available. Prices on peas do not change much, because canners are glad to get the crop behind them and thus get lined up for the coming season. Future peas seem to be receiving support on price basis about as last season. No particular scramble for futures, but a healthy interest is maintained.

California Fruits—Interest quiet; few retailers have any considerable surpluses, but there is a general feeling of extreme care on further stock acquisitions, this prompted by high prices now asked and the general expectation of lower figures later.

Not only a big crop in sight this summer, but a feeling that there will be some big unloading operations just before next pack in case the trade does not take hold and use up surpluses still being held on the coast. No question about it, this country can eat up an unbelievable lot of California canned fruit if prices can be made to permit the popularized retailer basis.

Spinach—Market is quiet and weak. There was too big a pack, and new crop will also be soon available. However, reduced acreage in some districts is probable.

In explanation of this condition, in the face of the growing popularity of such food, it has been stated that the entire south half of the country has taken a very strong leaning to mustard greens and turnip greens. Their popularity is spreading rapidly northward, and while at this time it would be hardly possible to find a hundred cases of mustard and turnip greens in the entire Chicago district, the spinach territory is becoming narrowed.

Bull Markets Ahead—It is apparent to those in daily contact with stock market operators that there are rumblings of a general strengthening in values, and it is said that this pending recovery is based on actual sound values of industry itself.

This upturn will carry with it additional boom in food products. We will get some of the sharp upturns on canned foods which have been postponed since the early part of November.

J. Harry Cain
Merchandise Broker
Canned Foods a Specialty
Phoenix Building, -:- Baltimore, Md.

THE OZARK MARKET

By OZARKO
Special Correspondent "The Canning Trade."

Better Shipping Weather—Better Demand for Tomatoes—Many Canners Shipping Last Cars—Prices Advancing—Southern Buyers Taking Futures—Some Canners All Sold Up on Futures—Many Canners Want Higher Prices Than Now Offered. Spot and Future Bean Prices on Same Level.

Springfield, Mo., February 13, 1930.

WEATHER—Normal weather conditions have prevailed throughout the Ozarks during the past week. The snow and ice which had covered the ground in the district for the past month have at last disappeared.

Spot Stocks—There has been a more active demand for spot tomatoes and canners' spot holdings have been materially reduced. At a number of points over the district canners are busy making shipments, and quite a few canners are shipping out their last cars.

Spot Sales—On sales of spot tomatoes during the past week, 1st standard 10 oz. have been sold at 62½c to 65c dozen; No. 303 cans mostly at 90c dozen; No. 2 standards from 95c to $1.00 dozen. Small lots of No. 2½ standards, usually for shipment in mixed cars with other sizes, from $1.35 to $1.50 per dozen. At the close of last week's business, the market on spot tomatoes was extremely strong, with somewhat higher prices prevailing.

Today's Market for Tomatoes—There is a variation in the range of prices at which different canners are willing to confirm sales on spot tomatoes now. The range of these market prices are about as follows: 1st standard 10 oz., 65c to 70c; No. 303 cans, 92½c to 97½c; No. 2 standards, 95c to $1.05; No. 2½ standards, if obtainable, $1.50; No. 10 standards, if obtainable, $5.00, f. o. b. factory points.

It is now very difficult to buy spot tomatoes in mixed cars, as the average canner's principal holdings are in No. 2 standards.

Future Tomatoes—There is more or less selling of future tomatoes almost daily, and at canners' full asking price. The jobbing grocers in the Southern States seem to be more liberal buyers of future tomatoes than the jobbers located in the States farther North. A few of the good-size canners advise us that they have sold all the future tomatoes that they care to sell at the opening prices. There is an evidence that some canners in the district will delay confirming sales on future tomatoes for awhile, at least. These canners don't seem willing to book business at the prices that are at present prevailing on futures.

Prices Future Tomatoes—All sales made for future delivery on canners' usual contract, fall shipment when packed: 1st standard 10 oz., 52½c; No. 300 cans, 15 oz., 72½c; No. 303 cans, 16 oz., 75c; No. 2 standards, 80c; No. 2½ standards, $1.10; No. 10 standards, $4.00, f. o. b. factory points.

Some few canners in the district seem willing to book orders on future No. 2 extra standards at 90c and No. 2½ extra standards at $1.20. Most canners, however, prefer to sell standard grade, due to the uncertainty of the crop season, and perhaps difficulty in packing extra standard quality.

Spot Green Beans—Sales of No. 2 cut green beans the past week has been very limited—the supply seems to be ample—canners generally holding No. 2 cuts at $1.00. We believe there are one or two lots of No. 10 cuts, which could probably be bought at $5.25 to $5.50 factory points.

Future Green Beans—Canners are quoting future stringless green beans for shipment, when packed, either in straight cars or for shipment in cars with tomatoes, at the following range of prices: No. 1 standard cuts, 70c; No. 303 standard cuts, 90c to 95c; No. 2 standard cuts, 95c to $1.00; No. 10 standard cuts, $4.75 to $5.00; No. 2 extra standard cuts, $1.05; No. 10 extra standard cuts, $5.25; No. 2 extra standard whole, $1.20; No. 10 extra standard whole, $6.00.

The pack of whole beans will be limited, probably to less than five canners in the district, and only a few canners attempt to pack the extra standard cuts in sizes quoted.

Greens—It is still possible to buy in the Ozarks mustard and turnip greens in No. 2 and No. 10 cans. Prices remain unchanged from previous quotations.

Sweet Potatoes—One canner in the Ozarks who packs only high-grade quality of sweet potatoes has limited offerings in No. 2 size at $1.20 and No. 2½ size at $1.45, f. o. b. factory Northwest Arkansas.

Tomato Acreage—There is some evidence that would indicate that the canners of the Ozarks will likely have a slight increase

in their contracted acreage for the 1930 pack. This fact cannot be definitely settled, however, until the contracting season is further advanced.

Bean Acreage—As near as we can ascertain, the contracted bean acreage for the coming season's pack will likely be about the same as that of last year. Some canners who have not heretofore packed any green beans will likely pack in a very limited way the coming canning season.

Information—It is now definitely known that the fifteen canning factories in the Ozarks which have heretofore been operated by the late Mr. Roy Nelson, will all be in operation in the packing of tomatoes, season of 1930. These several factories will be under new ownership, but we believe in every instance will have the same factory superintendents who have had these factories in charge for a goodly number of years.

CALIFORNIA MARKET

By "Berkeley,"
Special Correspondent "The Canning Trade."

Crop Outlook Not So Favorable—Moisture Lacking—Exports Increase in Value—Pear Growers Meet—New Pea Prices Soon—Fruits Were Active—Some Business in Tomatoes—Rhubarb Added to Packs—Canners Hold Stockholders' Meetings.

San Francisco, February 12, 1930.

CROPS—While weather conditions have been ideal for comfort during the past month, they have not been entirely favorable for crops, and the outlook for the coming season is not as satisfactory as it might be. Rain and snowfall in California has been below normal for so many years that many do not appreciate how much of both are required. So far this season there have been but two storms, one in December and the other in January, and nowhere in the State is the precipitation up to normal. San Francisco has had but eight inches, as compared with a normal to that date of fourteen inches, and this ratio is quite general. In the San Joaquin Valley, however, the precipitation is less than half the normal. Unseasonably warm weather has prevailed of late, with the result that fruit trees are commencing to bloom in some places, exposing them to the danger of damage from frosts. Much more rain is needed if crops in California are to be up to the average in size or quality.

Exports—Although exports of canned and prepared fruits from San Francisco fell from 205,522 pounds in 1928 to 195,649,169 pounds in 1929, the actual value rose from $20,886,749 to $21,813,190. The frost last spring cut the yield materially, and the short crop brought more money than the big harvest of 1928. Exports of canned fruits from Los Angeles in 1929 were 11,552,357 pounds, worth $1,044,541, for 1929, as compared with 11,039,241 pounds, valued at $805,252 in 1928. The dried fruit exports in 1929 fell off about onehalf in volume, but the falling off in value was not in the same proportion, as prices were much higher.

Pear Growers—The annual meeting of the California Pear Growers Association was held at the St. Francis Hotel, San Francisco, last week, with about one hundred members in attendance. President Frank T. Swett reported the association in excellent condition, with the membership growing and all but a small acreage enrolled. The association is not only out of debt, but has $147,000 in the treasury to carry on the work of 130, making it unique among co-operative organizations. President Swett reported on the recent conference held in Washington between representatives of fruit and vegetable growing interests and the Federal Farm Loan Board, and said that the plan of creating a national sales agency for the marketing of fruits and vegetables did not prove acceptable to the majority. He said that the pear growers have no need for Federal assistance. The canned pack for 1929 amounted to 2,101,901 cases, as compared with 2,336,593 cases for 1928. The latter year was marked by heavy shipments to the Eastern fresh fruit markets, while in 1929 a large part of the crop went into cans, with the higher grades bringing $85 a ton to growers.

Peas—Opening prices on Utah peas are expected at an early date, as Wisconsin packers are coming out with future lists. Canners are out after early business, and buyers who bought well in advance last year fared so well that early sales are expected to be heavy. Last year the California Packing Corporation named prices on Utah peas on February 15th.

Fruit—Canned fruit business showed some real activity last week, although orders were still rather limited as to quantities. This situation is expected to prevail the rest of the season, both jobbers and retailers desiring to keep stocks as low as possible. An especially good business has been done on the lower grades of apricots and pears, just the lines on which some real activity was desired, and these fruits are being held a little firmer.

Tomatoes—A fair business continues to be done on the small list of tomatoes still in first hands, with prices at the same levels as for weeks. A few sales of puree have been made during the last few days, but holdings are confined to one firm, it is believed, and stocks are very limited. The transactions reported have been confined to the fancy grade in the No. 10 size, the price being $6.

Rhubarb—Several canneries in the Greater San Francisco field plan to make packs of rhubarb this year. Alameda county alone has about 1800 acres devoted to this crop, and this is steadily being increased. Most of the crop is sold on the Pacific Coast, although quantities are being shipped to the Eastern and Middle Western States. The demand for rhubarb in the canned form is growing, and this is leading to test packs in California.

Meetings—The annual meeting of the Hawaiian Pineapple Company, Ltd., will be held at the office of the company, Honolulu, T. H., on March 18th, to fix the number of directors, elect directors and an auditor and to transact other business. In his annual report to the directors President and General Manager James D. Dole directed attention to the fact that in 1929 the plantations were producing pineapple from a total area under cultivation of 24,923 acres, and that about 1,900 acres had been planted on virgin soil in the Island of Lanai during the year. Experiments were started in the fall in the growing of pineapples in Fiji, and should these prove successful a plan of expansion may be decided upon to supply the British and Canadian markets. During the past year the old cannery at Honolulu has been replaced with a new one, which, when fully equipped, will have forty-eight processing lines and will be able to handle 250,000 tons of fresh fruit a year. During the present year it is planned to erect a calcium citrate and citric acid plant costing about $250,000, for the extraction of citric acid from the by-product mill juice. The demand for the company's canned product is greater than its ability to supply it, and a ready market for the 1930 pack is considered assured. The stockholders of the company total 2,107, of whom about one-quarter are employes.

The addition of Del Monte coffee to its line of nationally distributed products was announced recently by the California Packing Corporation, of San Francisco, Cal., and national advertising will be commenced this month. The use of this trade name is contested by Tillman & Bendel, Inc., on the ground that it has made and sold coffee continuously under this name since 1887. The argument over its use is confined strictly to coffee, however. A suit by Tillman & Bendel, Inc., against the California Packing Corporation to enjoin the use of the trade-mar'a Del Monte on coffee is pending at the present time, it is asserted.

Notes—Otto Ubrick, foreman of the plant of the R. Hickmott Canning Company, Antioch, Cal., passed away suddenly at Modesto, Cal.

Hosmer Rolph, of the Griffith-Durney Co., San Francisco, Cal., and recently appointed manager of the Haiku Pineapple Company, Ltd., has left for the Hawaiian Islands.

The cannery of the British Columbia Fishing and Packing Company, at Bellacoola, B. C., was destroyed by fire recently.

The name of the Pacific American Company, one of the world's largest salmon canning concerns, operating in the Pacific Northwest and Alaska, has been changed to that of the Pacific American Fisheries, Inc.

THE GULF STATES MARKET

By BAYOU
Special Correspondent of "The Canning Trade"

Supply of Shrimp in This Section Not Stable—Alabama Has Had Small Strikes—Mississippi in the Same Boat—Weather Very Favorable and Manages to Keep the Oyster Business Moving.

Mobile, Ala., February 13, 1930.

SHRIMP—The supply of shrimp in this section is about as stable as the stock market. One day it takes a little spurt upwards and things look encouraging for a good supply, only to drop down the next day to low levels and then some. With this very limited amount of shrimp received in this section the last six months, if business was normal, raw headless shrimp would be bringing 25c per pound to the raw shippers, and No. 1 large, fancy, $2 per dozen to the canners, because

there have not been enough shrimp caught in this section to supply a normal demand within a radius of one hundred miles of the producing centers, much less take care of any business beyond that boundary.

Alabama has had small strikes of shrimp off and on (more off than on) that have served as rays of hope to the fishermen and encouraged them to stick it out, but beyond this it has not figured very much, and certainly not as a shrimp pack.

Mississippi is in the same boat as Alabama. Very few shrimp caught on its coast. Louisiana waters have yielded the majority of the shrimp packed in this section, but it has been nothing to brag about. The weather has started very favorably for shrimp fishing this week, and some fair catches were received this afternoon, and the chances are that this will be all there is to it, and very light catches will be the order of things for the balance of the week.

The price of canned shrimp is $1.35 per dozen for No. 1 small and $1.65 per dozen for No. 1 large fancy, f. o. b. cannery.

Oysters—The weather is cold and fair and this manages to keep the oyster business moving, but not in a rush, and the supply is exceeding the demand at all times. All raw shippers are anxiously waiting to see what effect Lent will have on the oyster business this year.

Mississippi is going on with its oyster pack, and, while not at a high speed, yet she may be able to go over the top on a normal pack. Louisiana packs very few oysters on account there are not many sea foor canning plants in the state, but she supplies the biggest portion of the oysters packed in Mississippi, and the stock of oyster in Louisiana Marsh are certainly in fine shape now.

Alabama is packing no oysters because there are none available in the State, due to the heavy freshet that killed them last spring, but the reefs having been planted this summer, are expected to be in shape next year for the canning plants.

What Canned Foods Distributors are Doing

Grocers' Association Claims Swift Statements Conflict in Packers' Consent Decree Cases—Virginia Chain Store Tax Held Constitutional in Important Decision of Attorney General—Status of Wholesaler-Retailer Combination Outlined by Ohio Association Secretary Roanoke Food Show Opens Mach 17—McLaurin Holds no Fear of Business Depression During 1930.

ASSOCIATION CLAIMS SWIFT STATEMENTS CONFLICT.—The American Wholesale Grocers Association has pounced upon what it claims are conflicting statements regarding the packers' consent decree case. One is from an article by Louis F. Swift, President of Swift & Co., and the other from Swift & Co.'s petition to the District of Columbia, as of August 10, 1929. Mr. Swift's statement, as published in Forbes' Magazine February 1, 1930, follows:

"Experience has clearly shown that there is a logical place for chain stores in the retail system. They are doing their work of distribution remarkably well. But I see no likelihood that the chains will develop to a point where they will take over all, or nearly all, of the job retail distribution. On the contrary, there is bound to remain a large field for the individual retailer.

. . An interesting feature in the development of retail chains is the fact that straight meat chains have not come along as rapidly as the grocery and other chains. The reason for this is that the sale of fresh meat in retail stores does not lend itself readily to mass principles. . . From this point of view the advantage in the retail distribution of meat obviously lies on the side of the individual independent retailer.

"Yet the rapid extension of the chain store principles has forced many grocery chain organizations to add fresh meat to their retail line. . . The results thus far have been only fair from a profits point of view.

"It has seemed clear that it would be unwise for the large packer to go into the business of selling his product at retail, just as it would be equally unwise for the chain store to go into the complicated business of meat packing. This would involve duplication of equipment and effort all around.

"Chain stores would have to provide new plants, personnel, refrigerated warehouses and transportation service, while the large packer would have to secure expensive retail locations and enter the retail grocery business as well if he fell in line with the obvious trend in retailing.

"Duplication of effort on such a scale would be uneconomical and socially wasteful."

The Swift petition stated:

"In 1919 the chain grocery stores sold practically no meats, and even as late as five years ago were an inconsequential factor in the meat trade. In the last few years their expansion in that field has been so aggressive and rapid that today one hears predictions that in a few years most of the retail meat business of the country will be in the hands of the chains. . . Chains are undoubtedly doing at least 50 per cent of the meat business in certain centers, and, as previously stated, some observers expect to see most of this business out of the hands of independents within a few years. . . This movement, when completed, will concentrate by far the greater part, if not all, of the meat purchases for retail distribution in this country in the hands of a few buyers. . . As the chain stores increase in number the independent retailers decrease.

"All chains are now operating a total of approximately 15,000 meat markets, and, according to the Chain Store Research Bureau, do 19 per cent of the total retail meat business. They found their meat departments very profitable.

"It is becoming more and more evident that the manufacturer will be faced with two alternatives. Either he must manufacture for the big buyer, the chain store companies or other groups of consumers, or else he must try to carry his distribution all the way to the consumer by having his own retail agencies or outlets.

"It is entirely conceivable, and in fact highly probable from present indications, that the large retail grocery chains will expand much further into the meat packing field as they expand in the field of retail meat distribution.

"The modern tendency in the distribution of goods is directly from the manufacturer to the consumer. . . The restrictions of this injunction as to retail meat markets should be removed so these defendants will have the right to conduct their business in accordance with modern methods as they develop. . . ."

The Association then states: "After saying that packer retailing and chain store packing would be unwise, uneconomical and wasteful, Mr. Swift suggests his program for the meat business:

"I believe far better results could be achieved through intelligent co-operation between the great wholesale and retail distributing agencies. Does he mean that the large meat packers and the large chains should get together on a program of 'intelligent co-operation'? This is what some observers believe to be the packers' real purpose in seeking modification, a nation-wide alliance between national packers and national chains."

Chain Store Tax Declared Constitutional—The Attorney-General of the State of Virginia has declared constitutional the new chain store tax bill, according to a bulletin issued by W. P. Johnson, secretary of the Virginia Wholesale Grocers Association. He has informed members that the bill provides that annual state license taxes shall be graduated to the amount of purchase of a single store, ranging from $10 for those not exceeding $1,000 to $20 on the first $2,000, 20c on the $100 from $2,000 to $100,000, and 10c on the $100 upon all in excess of $100,000.

The provision for two or more stores reads as follows:

"And for the second and every other such store or definite place of business heretofore and hereafter established in this State the amount of the annual state license tax to be paid for such second and every other store or definite place of business shall be graduated as follows: If the amount of purchases shall not exceed $1,000 the amount shall be $60; when purchases ex-

ceed $1,000 but do not exceed $2,000 the amount shall be $70, and when purchases exceed $2,000 but do not exceed $100,000 the amount shall be $70 for the first $2,000 and 25c on the $100 on the excess from $2,000 to $100,000, and when purchases exceed $100,000 the amount shall be $70 on the first $2,000, 25c on the $100 from $2,000 to $100,000 and 10c on the $100 upon all in excess of $100,000.

"For the purpose of this section whenever the store or definite place of business licensed as the first store or definite place of business shall cease to be operated by such merchant, firm, company or corporation, the next store or definite place of business heretofore or hereafter established and in operation shall be treated in all respects as the first for the next succeeding license years."

Outlines Status of Wholesaler-Retailer Combination—The present status of the wholesaler-retailer combination in the grocery business was outlined by Selden L. Trumbull, Secretary of the Ohio Wholesale Grocers Association, in a statement which follows in part:

"At the present time the wholesaler-retailer combination seems to be holding its own after a loss of about 35 per cent of the grocery business to the chains. It is the jobbers' belief, however, that most of this has been built upon propaganda rather than economic soundness. Time alone will render the verdict, but with the firm conviction that the fundamentals of the manufacturer-wholesaler-retailer method of distribution are sound, the jobbers of Ohio are lending aid to the retailer by curtailing credits and outstandings by educational work along lines of merchandise and store arrangement, advertising, competitive merchandising methods, and, in fact, all branches of the business. We defend them in court against any prosecution for selling household remedies, lend every effort to stamp out fraudulent advertising on the part of their competitors, assist materially in arranging retail grocers' meetings and, upon occasion, furnish speakers.

For the future we are hopeful of arranging joint meetings of manufacturers-wholesalers-retailers to the end that individual problems may be better understood.

Roanoke Food Show Opens March 17—St. Patrick's Day has been chosen as the date of opening of the Roanoke Food Show, at Roanoke, Va. This is sponsored by the Reliable Service Grocers of Roanoke, to be held in that city's auditorium. There is every reason to expect that this year's show will greatly surpass those of former years, according to the survey of E. R. Chick and J. W. Crawford, president and secretary of the organization.

Last year there were about sixty booths on the floor of the Auditorium. During the six days of the show more than 30,000 persons passed through the gates.

An even larger number of patrons is expected this year. Two automobiles are among the numerous prizes that will be given away during the course of the 1930 exhibition. A large quantity of food will be given away each afternoon and night. The atuomobiles are to be awarded as attendance prizes. Silver cups have been offered by J. B. Fishburn to the exhibitor having the best display of food, and by J. P. Mundy to the exhibitor having the best decorated booth.

Holds No Fear of 1930 Depression—J. H. McLaurin, president of the American Wholesale Grocers Association, holds no fear of any business depression during 1930. He states that "the National Business Survey held in Washington recently should remove from the wholesale grocers and other merchants any fear of business depression during 1930. At that meeting it was clearly demonstrated that there is no basis for a general hard times feeling or for business or commercial stagnation."

50 Years of Service to Canners
Thos. J. Meehan & Co., Inc.
(Thos. L. North)
11 W. Redwood Street, Baltimore Md.
BROKERS and COMMISSION MERCHANTS
Canners' Accounts Solicited for Tip-Top Buyers.

GLASS CONTAINER HAS FINE YEAR

THE glass container industry of America has experienced a steady growth during the past year, and looks for considerable expansion in 1930, according to Philip W. Heuisler, President of the Glass Container Association of America, and also President of the Maryland Glass Corporation, of Baltimore. Mr. Heuisler's statement on the condition of the industry follows:

"The glass container manufacturing industry during the year just closed has maintained its record of steady and healthy development. Additional uses for glass jars and bottles in the preservation and packing of foods, dairy products, beverages, chemicals and condiments are being developed rapidly, and the industry has expanded to meet the new demands.

"There has been a decided impetus to the call on the part of the American housewife for a wider variety of foodstuffs packed in glass.

"The laboratories of the association have been constantly engaged in research and tests to determine efficacy of preservation and the types of glass best suited for the packing of individual products. It may be stated that marked progress has been made in the development of numerous grades of glasses and closures for the more efficient preservation of all classes of foodstuffs, drinks and pharmaceuticals.

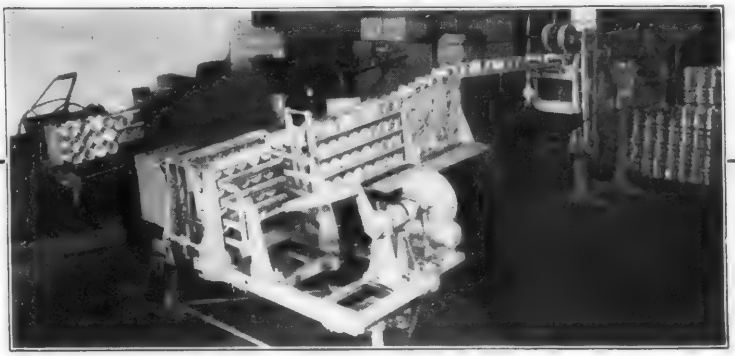
"A notable advance has been made during the year in the matter of appearance in glass containers. Heretofore manufacturers have been chiefly concerned with the efficiency of their products; the industry now is turning its attention to style and beauty in types, sensing the public's demand for appetizing appeal particularly in the packing of foodstuffs. So rapid has been this development that today a very considerable volume of the glass container output is the product of artistic design, both as to color and shape.

"The industry looks for a healthy and satisfactory expansion during the new year."

ASSOCIATION MEETING DATES

Feb. 24-25, 1930—Utah Canners, Hotel Utah, Salt Lake City.

SHOULD BE
In Every Cannery Office
"A Complete Course in Canning"
As an insurance against loss
Published by
THE CANNING TRADE
Baltimore, Md.



Knapp

Modern Canned Food Buyers
give preference to *Good Labeling*

Wide - awake Factory Owners
demand *Lowest Operating Costs*

Knapp Labeling and Case Packing
Machines accomplish *both!*

The many improved and new features combined in present type Knapp Warehouse Equipment produce easier, faster and better labeling and case packing than ever before—at lowest operating cost. A letter or telegram will bring you detailed information.

Labeling Machines
Case Packers
Can Elevators
and Dividers

The FRED H. KNAPP CORPORATION

GENERAL OFFICE AND FACTORY
RIDGEWOOD, NEW JERSEY

Wanted and For Sale.

This is a page that must be read each week to be appreciated. You are unlikely to be interested every week in what is offered here, but it is possible you will be a dozen times in the year. If you fail to see and accept your opportunity your time is lost, together with money. Rates upon application.

For Sale – Machinery

FOR SALE—200, 250 and 300 gal. Copper Steam Jacketed Kettles, in A-1 condition, complete with frame and valves.
Two 300 gal. Jacketed Copper Kettles.
The above items are all in good condition, and are offered because of changes that are being made in my equipment.

Address Box A-1690 care of The Canning Trade.

FOR SALE—4 Double Morral Huskers. Very latest type. With side delivery and both corn and husk conveyors. Only 200 tons corn run through same. Guaranteed good as new machines. New York canner authorizing sale of same asks $500.00.

Address Box A-1719 care of The Canning Trade.

FOR SALE—
1 600 can Anderson-Barngrover Continuous Cooker, for No. 2, No. 2½ and No. 3 cans.
1 M & S 6 pocket Cooker Filler
2 Morral Corn Cutters
1 30 ft. 6'' Worm Corn Conveyor
1 10 ft. Bucket type Elevator for Corn
1 Monitor Pea Grader. Two sets screens
All of above in good working condition. Some items as good as new. Write for prices.

Littlestown Canning Co., Inc., Littlestown, Pa.

FOR SALE—
Two Monitor Tomato Washers
Two Peerless Tomato Washers
Three Monel Metal Tomato Crushers
Three Tomato Sorting Tables
Two Tomato Feeding Tables.
All in good working condition.

Address Box A-1726 care of The Canning Trade.

FOR SALE—Sprague Corn silk brush machine; 40 h. p. 11 x 16 Eclipse Stationary Engine made by Frick Co., Waynesboro, Pennsylvania. Both in A-1 condition.

Address Box A-1725 care The Canning Trade.

FOR SALE—2 Peerless Huskers; 1 M. & S. 4-pocket Cooker and Filler; 50 ft. of Worm Conveyor for cut corn; 1 three KW. DC. Generator; 1 20 HP. Motor, 60 cycle; 1 7x12 Engine; 1 Boiler Pump; 1 Feed Water Heater; 2 Safes; 1 Portable Watchman's Clock and other factory equipment and supplies.

A. R. Hunt, Executor, Oswego, N. Y.

FOR SALE—1 Hutchinson Hand Tomato Filler; 2 Monitor Re-cleaners; 4 Conveyors for carrying peas from field to viners; 3 Hoppers for shelled peas; Tanks and Pumps of different sizes; Engines, Beveled Gears, Shafting, Pulleys and Hangers.

Oswego Preserving Co., Oswego, N. Y.

FOR SALE—One new John Bean Spray Outfit, No. 827-P, complete with 6 row truss frame boom, 3 nozzles per row. This machine is complete with engine to drive air pressure pump, and has never been used. Price 10% less than Bean's price for the same new machine.

Charles G. Summers Jr. Inc., Baltimore, Md.

FOR SALE—1 Monitor Bean Cutter, 1 Robins Rotary Washer and a number of Blanching Tubs, Brine Tanks and Blanching Baskets. All in A-1 condition; used one season.

H. N. Baldwin, Chestertown, Md.

FOR SALE—
One new Monarch Scalder, No. 2
One used Ayars Universal Filler for No. 2 and 3 size, in good condition.

Address Box A-1729 care of The Canning Trade.

FOR SALE—Two No. 10 Ayars Plunger Fillers in good condition. One Pumpkin Press in good order. Two 300 gal. Jacketed Copper Kettles. The above items are all in good condition and are offered because of changes that are being made in my equipment.

Edgar F. Hurff, Swedesboro, N. J.

Wanted—Machinery

WANTED—One good second hand Pea Filler for No. 1 cans. In reply please give description, condition of machine and very best price.

Address Box A-1727 care of The Canning Trade.

WANTED—One A. T. Ferrell Sample Pea Grader.

Rushville Preserving Co., Inc.. Rushville, N. Y.

WANTED—No. 10 Wonder Cooker, capacity about 1,000 cans per hour.
No. 3 Labeling Machine.

Address Box A-1730 care of The Canning Trade.

WANTED—
1 Colossus Grader.
1 12 foot and one 8 ft. Goose Neck.
1 Short Rotary Washer.

Address Box A-1733 care of The Canning Trade.

For Sale—Factories

BARGAIN—Combined Apple Barrelling-Vinegar and Canning Plant in foremost Eastern Apple Belt, for sale at small fraction of cost or replacement value. Now organized to produce vinegar with lowest overhead. A sound investment as well as an opportunity.

Michael F. Shea, Auctioneer, 366 Fifth Ave., New York City

FOR SALE—Small Tomato Canning Plant at Eldora. New Jersey. Has been operated continuously by the present owners for 25 years and will continue to be operated if not sold although the senior member of our firm wants to slow down and that is the only reason for selling. It will not be sold for less than a fair price although at a fair price it is still a bargain, for in 25 years it has never lost a load of contract Tomatoes, and that is a priceless asset for a Tomato cannery. It is a splendid location for a small business which can be increased if desired.

C. S. Stevens & Sons, Cedarville, N. J.

FOR SALE—Ideally located Corn and Pea Plant; large 3 story warehouse and factory.

Address Michael F. Shea, Auctioneer,
366 - 5th Ave., New York City.

FOR SALE – Two Canning Factories located in one of the best tomato growing sections of the peninsula. Fully equipped with modern machinery, including revolving peeling tables, continuous cookers, kettles. Plenty of warehouse space; convenient to water and railroad transportation; plenty of local labor available. Prices reasonable.

Allen Package Co., Inc., Seaford, Del.

For Sale—Seed

SEED FOR SALE—"Build the foundation of your tomato crop on the solid rock of Indiana Baltimore quality." For full information write

Kenneth N. Rider, Sec'y, Indiana Canners Association, Matthews, Indiana.

FOR SALE—Tomato Seed. Genuine Marglobe Tomato Seed certified by the Maryland Seed Certification Board. Also selected Tri-State Radebaugh.

Tri-State Packers Association,
Easton, Md.

FOR SALE—Cabbage Plants. Six leading varieties. Prices upon request. When inquiring state variety, quantity and date wanted.

Davis Plant Co., Tifton, Ga.

Slaysman & Co.

Automatic Can Making Machinery

801 E. Pratt Street :: Baltimore, Md.

CANNERS SEED PEAS

Our seed peas are grown under the personal supervision of members of our firm in the Pacific Northwest where climatic conditions are most favorable for high vitality.

"OUR SEEDS GROW FRIENDS"

WRITE FOR FUTURE CONTRACT PRICES

Washburn-Wilson Seed Co.

Moscow, Idaho

FOR SALE—

Spot Pea Seed—Alaskas 8½c lb.
Green Admirals 10c lb.
Freight allowed in carlots of 80,000 lbs.
Spot Seed Beans New Crop.
Giant Stringless 20c lb. Burpee Stringless 20c lb.
Bountifuls 22c lb. New Stringless Kidney Wax 22c lb.
Henderson Bush Lima 14c lb.
All other varieties of standard Beans at reasonable prices.

S. D. Woodruff & Sons,
201 Washington St., New York City.

FOR SALE—3,000 pounds Giant Stringless Green, 500 pounds Round Pod Kidney Wax Bean Seed, Western grown.

New Era Canning Co., New Era, Mich.

FOR SALE—Bantam Evergreen Sweet Corn Seed, either in ear or shelled. Vigorous and good germination. Write for special prices.

Address Box A-1728 care of The Canning Trade.

Wanted—Seed

PEAS WANTED—We will pay a good cash price for 23,000 pounds Perfections, 12,000 pounds each Horsfords and Surprise. They must be of 1929 crop, grown by either Rogers Brothers or Associated Seed Company.

Address Box A-1721 care of The Canning Trade.

Help Wanted

WANTED—Experienced Catsup and Chili Sauce Cook. Man from Indiana or New York State preferred. Must have A-1 reference. State experience, age and salary expected. Advise what other products familiar with.

Address Box B-1717 care of The Canning Trade.

WANTED—Man experienced in packing full line of Pickle Products, including Fresh Cucumber Chips. Give full reference, age, salary, and knowledge or other products packed.

Address Box B-1718 care of The Canning Trade.

WANTED—Salesman, age 25 to 40, to cover Maryland, Delaware and Virginia for Brokerage house. Experience in wholesale grocery business necessary.

Address Box B-1732 care of The Canning Trade.

Situation—Wanted

POSITION WANTED By first class packer of fruits and vegetables. Can also build and equip most any size plant. Have about 25 years experience in canning and building. Am also a machinist.

Address Box B-1720 care of The Canning Trade.

POSITION WANTED—As Manager or Superintendent by young man experienced in the canning of Tomatoes, Green Beans, Beets, Spinach, Sweet Potatoes, Hominy, etc. Can handle all branches of the business; field, office, factory and warehouse. Eight years as manager with present company. Can handle labor and install and maintain equipment. Will furnish excellent reference.

Address Box B-1723 care of The Canning Trade.

POSITION WANTED—As Manager or Superintendent, by young man, with 10 years experience as Manager of fruit and vegetable canning plant, experienced in handling a full line.

Address Box B-1731 care of The Canning Trade.

STRASBURGER & SIEGEL

Consultants to the Canning Industry

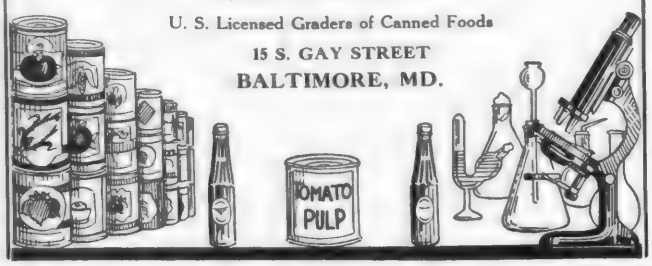
CHEMISTS, BACTERIOLOGISTS

Spoilage Investigations

U. S. Licensed Graders of Canned Foods

15 S. GAY STREET

BALTIMORE, MD.



Can prices

1930 season

The American Can Company announces the following term contract prices, F.O.B. its factories, for Standard Sizes of Sanitary Cans for the Central and Eastern parts of the United States.

No. 1	size	$14.85 per M.
No. 2	size	20.67 per M.
No. 2½	size	26.06 per M.
No. 3	size	28.14 per M.
No. 10	size	62.21 per M.

AMERICAN CAN COMPANY

CONTAINERS OF TIN PLATE - BLACK IRON - GALVANIZED IRON - FIBRE

METAL SIGNS AND CANCO DISPLAY FIXTURES

WAREHOUSING

Field and Metropolitan warehousing, the first merging into the latter if desired.

FINANCING

Loans arranged thro' affiliated organization at lowest rates consistant with collateral available.

SERVICE

General information, available thro' wide spread contacts with producers and consumers, a service we offer to clients.

GUARDIAN WAREHOUSING COMPANY
222 West Adams Street
Chicago.

Eliminate causes of "flats" and "sours" & insure sanitary cleanliness
Ask your supply man for
Wyandotte
Cleans Clean
Sanitary Cleaner
The J. B. Ford Co., Sole Manufacturers, Wyandotte, Mich.

RENNEBURG'S

Improved Process Steel Kettle

Equipped with all the latest improvements. Strongly and accurately made. Has been used for years with perfect satisfaction.

PROCESS KETTLE

MADE BY
Edw. Renneburg & Sons Company
OFFICE:
2838 Boston Street
WORKS:
Atlantic Wharf, Boston Street and Lakewood Avenue
BALTIMORE - MD.

GAMSE'S ATTRACTIVE LABELS

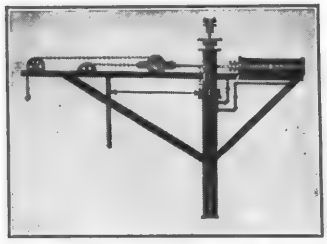
Appearance counts. Dress up your can with an artistic Gamse Label.

H. GAMSE & BRO.
Lithographers
GAMSE BUILDING
BALTIMORE MARYLAND

Robins Dependable Canning Machinery Since 1855

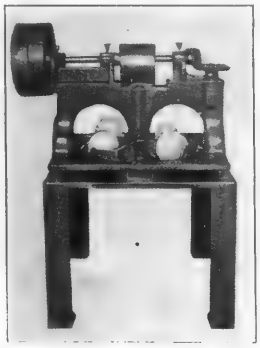
ROBINS SKIN PUMP

ROBINS PUMPKIN STEAMER
Write for Special Circular

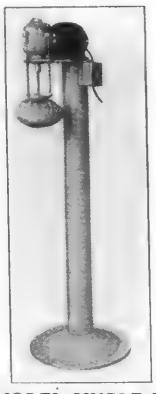


ROBINS CIRCLE STEAM HOIST

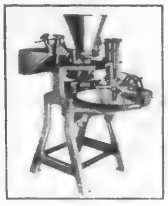
AYARS UNIVERSAL FILLER
For Tomatoes, Cut String Beans, Beets, etc.



LATEST SEMI-AUTOMATIC CABBAGE CUTTER WITH ROTARY FEED
Cuts Cabbage Rapidly
Very Long Cut;
60 Cabbage per Minute.

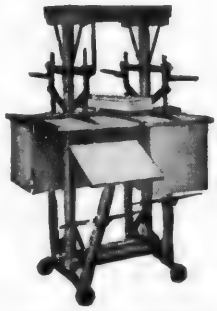


NEW MODEL SINGLE MOTOR DRIVEN UPRIGHT PORTABLE CABBAGE CORE SHREDDER;
Connects to Lamp Socket:
20 to 25 Cabbage per minute.

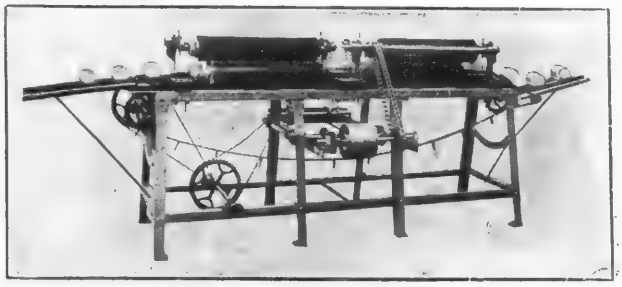


AYARS NEW PERFECTION PEA FILLER
Write Us About the AYARS Syruper
The Most Practical On The Market

List of Users and Descriptive Circular Upon Request



McSTAY ROBINS LIGHTNING BOX SEALER



ROBINS-BECKETT CAN CLEANER
Cleans Tops, Bottoms and Sides of Cans
Removes Dirt & Rust Instantly

A. K. ROBINS AND COMPANY, INC.

ROBERT A. SINDALL, President. *HARRY R. STANSBURY, Vice-President*

Lombard and Concord Sts., Baltimore, Md.

Manufacturers of
CANNING MACHINERY AND SUPPLIES
WE FURNISH COMPLETE PLANTS
FOR VEGETABLES, FRUITS, SEA FOODS, ETC.
Write for Our Three-Hundred and Thirty-five Page Catalog

ARTISTIC LABELS

PLAIN.
VARNISHED.
EMBOSSED.

THE SIMPSON & DOELLER CO.
BALTIMORE, MD.

Every Sieve Accessible —Small Space

Hemlock, N. Y., Jany 12, 1928

The perfect grading, large capacity, the splendid washing it gives the peas, relative small floor space occupied, coupled with many other good points such as sturdiness of construction, cleanliness, etc., lead us to believe you have indeed brought out the ideal Grader.

The machine worked perfectly for us, the quality of grading surpassing anything we had ever had, and we feel sure all of our peas were in their proper grades.

Livingston County Canning Co. Inc.
Guy F. Osborn

The Hydro-Geared Pea Grader

Write for circular

The Sinclair-Scott Company
Wells and Patapsco Sts.
Baltimore, Md.

SMILE AWHILE

There is a saving grace in a sense of humor.

Relax your mind—and your body. You'll be better mentally, physically—and financially

Send in YOUR contribution

All are welcome.

THE FACT

The District Attorney was determined to shake the evidence of the defendant.

"Now, my man," he thundered, "you have stated that you made a 200-mile journey to look for a job. I say that another and stronger motive brought you."

"Quite right," admitted the defendant.

"Ah, now we are getting on," exclaimed the pleased District Attorney, "and what was that motive?"

"A locomotive."—Boston Transcript.

THAT'S THE TROUBLE

Henpecked Husband—I'm homesick.

Wife—But you are at home.

Henpecked Husband—That's just the trouble. I'm sick of it.

ONE SHORT

Farmer Jones—How much do you charge for family pictures

Photographer—Five dollars a dozen.

Farmer Jones—Well, I guess we'll have to come back later. We've only got eleven children.—Capper's Weekly.

YES, QUITE PROBABLE

Teacher—Tell me, George, why does the cuckoo lay its eggs in the nests of other birds?

George—Probably because of the housing shortage. —Detroit News.

FULL FLIGHT

"Mummy, can all angels fly?"

"Yes, darling."

"But the cook can't fly and daddy calls her his little angel."

"No, but she will fly, dear."

IN AND OUT

Agent for very small two-seater—Well, sir, are you going to buy it?

Stout Passenger—I suppose so. I'm afraid I can't get out of it now!

WHOSE?

The railway supervisor of a Western line received the following note from one of his foremen:

"I am sending in the accident report on Casey's foot when he struck it with the spike maul. Now, under 'Remarks,' do you want mine or do you want Casey's?" —Everybody's Weekly.

Overweight Woman—Doctor, what will I do to reduce?

Doctor—Take proper kind of exercise.

Overweight Woman—What kind of exercise would you recommend?

Doctor—Push yourself away from the table three times a day.

WHERE TO BUY

—— the Machinery and Supplies you need, and the Leading Houses that supply them. Consult the advertisements for details.

ACCOUNTANTS, Certified, Public.
Albert T. Bacon & Co., Chicago.

ADHESIVES, Pastes and Gums.
Fred H. Knapp Corp., Ridgewood, N. J.

ADJUSTER, for Chain Devices.
Hamachek Mach. Co., Kewaunee, Wis.
Apple Paring Machines. See Paring Mach.

BASKETS, Picking.
Planters Mfg. Co., Portsmouth, Va.
Swing Bros., Inc., Ridgely, Md.

BEAN SNIPPER.
Chisholm-Ryder Co., Niagara Falls, N. Y.

BEET MACHINERY.
Ayars Mach. Co., Salem, N. J.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.
A. K. Robins & Co., Inc., Baltimore.
Baskets, Wire, Scalding, Pickling, etc. See Cannery Supplies.

BELTS, Carrier, Rubber, Wire, etc.
La Porte Mat and Mfg. Co., La Porte, Ind.
Bean Cleaners. See Clean and Grad. Mach.
Beans, Dried. See Pea and Bean Seed.

BLANCHERS, Vegetable and Fruit.
Ayars Mach. Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Huntley Mfg. Co., Brocton, N. Y.
A. K. Robins & Co., Inc., Baltimore.
Sprague-Sells Corp., Chicago.
Blowers, Pressure. See Pumps.

BOILERS AND ENGINES, Steam.
Edw. Renneberg & Sons Co., Baltimore.
A. K. Robins & Co., Inc., Baltimore.
Slaysman & Co., Baltimore.

BOOKS, on Canning, Formula, Etc.
A Complete Course in Canning.
How to Buy and Sell Canned Foods.
A History of the Canning Industry.
The Almanac of the Canning Industry.
All published by The Canning Trade, Baltimore.
Bottle Caps. See Caps.
Bottle Cases, Wood. See Boxes, Crates.
Bottle Corking Machines. See Bottlers Mchy.

BOTTLES, Tumblers, Glassware.

BOTTLERS' MACHINERY.
Ayars Mach. Co., Salem, N. J.
Edw. Ermold Co., New York City.
Bottle Screw Caps. See Caps.

BOXES, Corrugated Paper.
Hinde & Dauch Paper Co., Sandusky, O.
U. S. Printing & Litho. Co., Cincinnati, Ohio.

BOX (Corrugated) SEALING MACHINES.
Fred H. Knapp Corp., Ridgewood, N. J.
A. K. Robins & Co., Inc., Baltimore.
Boxes, Corrugated Paper. See Cor. Paper Prod.

BOXES, Lug, Field, Metal.
Berlin-Chapman Co., Berlin, Wis.

BOXING MACHINES.
Fred H. Knapp Corp., Ridgewood, N. J.
Westminster Mach. Works, Westminster, Md.

BROKERS.
J. Harry Cain, Baltimore.
Howard E. Jones & Co., Baltimore.
Thomas J. Meehan & Co., Baltimore.
Phillips Sales Co., Cambridge, Md.
Buckets and Pails, Fiber. See Corr. Paper Products.
Buckets and Pails, Metal. See Enameled Buckets.
Buckets, Wood. See Cannery Supplies.

BURNERS, Oil, Gas, Gasoline, etc.
A. K. Robins & Co., Inc., Baltimore.

BY-PRODUCTS, Machinery.
Edw. Renneberg & Sons Co., Baltimore.
Cabbage Machinery. See Kraut Mchy.

CANNERS, Fruits and Vegetables, etc.
California Packing Corp., San Francisco.

CAN COUNTERS.
Ams Machine Co., Max, New York City.
Ayars Mach. Co., Salem, N. J.
Can Conveyors. See Conveyors and Carriers.
Can Fillers. See Filling Machines.

CAN MAKERS' MACHINERY.
Ams Machine Co., Max, New York City.
E. W. Bliss & Co., Brooklyn, N. Y.
Cameron Can Mchy. Co., Chicago.
Slaysman & Co., Baltimore.
Can Markers. See Stampers and Markers.

CAN SEALING COMPOUNDS.
Ams Machine Co., Max, New York City.

CAN WASHING MATERIALS.
Oakite Products, Inc., New York City.
J. B. Ford Co., Wyandotte, Mich.

CANS, Tin, All Kinds.
American Can Co., New York City.
Continental Can Co., New York City.
Heekin Can Co., Cincinnati, O.
Metal Package Corp., New York-Baltimore.
Phelps Can Co., Baltimore.
Phillips Can Co., Cambridge, Md.

CAN WASHING MACHINES.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.

CANNERY SUPPLIES.
Ayars Mach. Co., Salem, N. J.
F. H. Langsenkamp Co., Indianapolis.
A. K. Robins & Co., Inc., Baltimore.
Sinclair-Scott Co., Baltimore.
Slaysman & Co., Baltimore.
Sprague-Sells Corp., Chicago.
Can Stampers. See Stampers and Markers.

CAPPING MACHINES, Soldering.
Ayars Mach. Co., Salem, N. J.
A. K. Robins & Co., Inc., Baltimore.
Sprague-Sells Corp., Chicago.
Capping Steels, Soldering. See Cannery Sup.

CARRIERS AND CONVEYORS, Gravity.
Berlin-Chapman Co., Berlin, Wis.
A. K. Robins & Co., Inc., Baltimore.
Sprague-Sells Corp., Chicago.
Cartons. See Corrugated Paper Products.
Catsup Machinery. For the preparatory work: see Pulp Mchy; for bottling: see Bot. Mchy.
Chain Belt Conveyors. See Conveyors.
Chain for Elevating, Conveying. See Conveyors.
Checks, Employers' Time. See Stencils.
Chutes, Gravity, Spiral. See Carriers.

CLEANERS AND CLEANSERS.
J. B. Ford Co., Wyandotte, Mich.
Oakite Products, Inc., New York City.

CLEANING AND GRADING MACHY., Fruit.
Huntley Mfg. Co., Brocton, N. Y.
A. K. Robins & Co., Inc., Baltimore.
Sinclair-Scott Co., Baltimore.
Sprague-Sells Corp., Chicago.
Cleaning and Washing Machines, Bottle. See Bottlers' Machinery.
Cleaning Machines, Can. See Can Washers.

CLOCKS, Process Time.
Ayars Mach. Co., Salem, N. J.
Sprague-Sells Corp., Chicago.

CLOSING MACHINES, Open Top Cans.
Ams Machine Co., Max, New York City.
E. W. Bliss & Co., Brooklyn, N. Y.
Cameron Can Mchy. Co., Chicago, Ill.
Slaysman & Co., Baltimore.
Coils, Copper. See Copper Coils.
Condensed Milk Canning Machinery. See Milk Condensing Machinery.

CONVEYORS AND CARRIERS, Canners.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
A. K. Robins & Co., Inc., Baltimore.
Sprague-Sells Corp., Chicago.

COOKERS, Continuous, Agitating.
Ayars Mach. Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Sprague-Sells Corp., Chicago.
Cookers, Retort. See Kettles, Process.

COOLERS, Continuous.
Berlin-Chapman Co., Berlin, Wis.
Sprague-Sells Corp., Chicago.

COPPER COILS, for Tanks.
Berlin-Chapman Co., Berlin, Wis.
F. H. Langsenkamp Co., Indianapolis.
A. K. Robins & Co., Inc., Baltimore.
Sprague-Sells Corp., Chicago.
Copper Jacketed Kettles. See Kettles, Copper.

CORKING MACHINES.
Edw. Ermold Co., New York City.

CORN COOKER-FILLERS.
Ayars Mach. Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.
Morral Bros., Morral, Ohio.
A. K. Robins & Co., Inc., Baltimore.
Sprague-Sells Corp., Chicago.

CORN CUTTERS.
Berlin-Chapman Co., Berlin, Wis.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.
Morral Bros., Morral, Ohio.
A. K. Robins & Co., Inc., Baltimore.
Sprague-Sells Corp., Chicago.

CORN SHAKERS.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Huntley Mfg. Co., Brocton, N. Y.

CORN HUSKERS AND SILKERS.
Berlin-Chapman Co., Berlin, Wis.
Huntley Mfg. Co., Brocton, N. Y.
Morral Bros., Morral, Ohio.
Sprague-Sells Corp., Chicago.
United Company, Baltimore.
Corn Mixers and Agitators. See Corn Cooker Fillers.

CORRUGATED PAPER PRODUCTS (Boxes, Bottle Wrappers, etc.).
Robt. Gaylord, Inc., St. Louis.
Hinde & Dauch Paper Co., Sandusky, O.
U. S. Prt. & Litho. Co., Cincinnati, O.
Counters. See Can Counters.
Countershafts. See Speed Reg. Devices.

CRANES AND CARRYING MACHINES.
A. K. Robins & Co., Inc., Baltimore.
Sinclair-Scott Co., Baltimore.
Sprague-Sells Corp., Chicago.
Zastrow Mach. Co., Baltimore.

CRATES, Iron Process.
Berlin-Chapman Co., Berlin, Wis.
Edw. Renneberg & Sons Co., Baltimore.
A. K. Robins & Co., Inc., Baltimore.
Sprague-Sells Corp., Chicago.
Zastrow Mach. Co., Baltimore.
Cutters, Corn. See Corn Cutters.
Cutters, Kraut. See Kraut Machinery.
Cutters, String Bean. See String Bean Mchy.

CULTURES, Inoculation.
Strasburger & Siegel, Baltimore.

DECORATED TIN (for Cans, Caps, etc.).
American Can Co., New York City.
Continental Can Co., New York City.
Dies, Can. See Can Makers' Mchy.
Double Seaming Machines. See Closing Mach.

DRYERS, Drying Machinery.
Edw. Renneberg & Sons Co., Baltimore.
Slaysman & Co., Baltimore.
Employers' Time Checks. See Stencils.

ENAMELED BUCKETS, PAILS, Etc.
F. H. Langsenkamp Co., Indianapolis.
A. K. Robins & Co., Inc., Baltimore.
Sprague-Sells Corp., Chicago.
Engines, Steam. See Boilers and Engines.
Enamel-Lined Kettles. See Tanks.

EVAPORATING MACHINERY.
Berlin-Chapman Co., Berlin, Wis.
Edw. Renneberg & Sons Co., Baltimore.

EXHAUST BOXES.
Ayars Machine Co., Salem, N. J.
A. K. Robins & Co., Inc., Baltimore.
Sprague-Sells Corp., Chicago.
Zastrow Mach. Co., Baltimore.
Factory Stools. See Stools.
Factory Supplies. See Cannery Supplies.

FACTORY TRUCKS.
Chisholm-Ryder Co., Niagara Falls, N. Y.
A. K. Robins & Co., Inc., Baltimore.
Sprague-Sells Corp., Chicago.

FIBRE CONTAINERS for Food (not hermetically sealed).
American Can Co., New York City.
Continental Can Co., New York City.
Hinde & Dauch Paper Co., Sandusky, O.
U. S. Prt. & Litho. Co., Cincinnati, O.

FIBRE PRODUCTS, Boxes, Boxboards, Etc.
Robt. Gaylord, Inc., St. Louis.
Hinde & Dauch Paper Co., Sandusky, O.
U. S. Printing & Litho. Co., Cincinnati, Ohio.
Fillers and Cookers. See Corn Cooker-Fillers.
Filling Machines, Bottles. See Bottlers' Mchy.

FILLING MACHINES, Can.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.
Huntley Mfg. Co., Brocton, N. Y.
F. H. Langsenkamp Co., Indianapolis.
A. K. Robins & Co., Inc., Baltimore.
Sinclair-Scott Co., Baltimore.
Sprague-Sells Corp., Chicago.
Filling Machine, Syrup. See Syruping Mach.

FINANCING AND WAREHOUSING.
Guardian Warehousing Co., Chicago.

FINISHING MACHINES, Catsup, Etc.
F. H. Langsenkamp Co., Indianapolis.
A. K. Robins & Co., Inc., Baltimore.
Sprague-Sells Corp., Chicago.
Friction Top Cans. See Cans, Tin.
Fruit Graders. See Clean. & Grad. Mchy., Fruit.
Fruit Parers. See Paring Machines.

FRUIT PITTERS AND SEEDERS.
Huntley Mfg. Co., Brocton, N. Y.
Fruit Presses. See Cider Makers' Machinery.
Gasoline Firepots. See Cannery Supplies.

GENERAL AGENTS for Machinery Mfrs.
Berlin-Chapman Co., Berlin, Wis.
A. K. Robins & Co., Inc., Baltimore.
Sprague-Sells Corp., Chicago.
Generators, Electric. See Motors.

WHERE TO BUY—Continued

GLASS BOTTLES, TUMBLERS, Etc.

GLASS-LINED TANKS.
Sprague-Sells Corp., Chicago.

Governors, Steam. See Power Plant Equipment.
Gravity Carriers. See Carriers and Conveyors.
Green Corn Huskers. See Corn Huskers.
Green Pea Cleaners. See Clean. and Grad. Mchy.
Hoisting and Carrying Machines. See Cranes.
Hullers and Viners. See Pea Hullers.
Huskers and Silkers. See Corn Huskers.

INOCULATION, for Peas, etc.
Strasburger & Siegel, Baltimore.

INSURANCE, Canners'.
Canners' Exchange, Lansing B. Warner, Chicago.
Jacketed Kettles. See Kettles, Copper.

JACKETED PANS, Steam.
F. H. Langsenkamp Co., Indianapolis.
Sprague-Sells Corp., Chicago.

KETTLES, Copper, Plain or Jacketed.
F. H. Langsenkamp Co., Indianapolis.
A. K. Robins & Co., Inc., Baltimore.
Sprague-Sells Corp., Chicago.

Kettles, Enameled. See Tanks, Glass-Lined.

KETTLES, Process.
Cincinnati Copper Works, Cincinnati, O.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Edw. Renneburg & Sons Co., Baltimore.
A. K. Robins & Co., Inc., Baltimore.
Sprague-Sells Corp., Chicago.
Zastrow Mach. Co., Baltimore.

KNIVES, Miscellaneous.
A. K. Robins & Co., Inc., Baltimore.
Sprague-Sells Corp., Chicago.

KRAUT CUTTERS.
A. K. Robins & Co., Inc., Baltimore.
Sprague-Sells Corp., Chicago.

KRAUT MACHINERY.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.

LABELING MACHINES.
Edw. Ermold Co., New York City.
Fred H. Knapp Corp., Ridgewood, N. J.
Morral Bros., Morral, Ohio.
Sprague-Sells Corp., Chicago.
Westminster Mach. Works, Westminster, Md.

LABEL MANUFACTURERS.
H. Gamse & Bro., Baltimore.
R. J. Kittredge & Co., Chicago.
National Color Printing Co., Baltimore, Md.
Piedmont Label Co., Bedford, Va.
Simpson & Doeller Co., Baltimore.
Stecher Litho. Co., Rochester, N. Y.
U. S. Printing and Litho. Co., Cincinnati.

LABORATORIES, for Analyses of Goods, Etc.
National Canners Assn., Washington, D. C.
Strasburger & Siegel, Baltimore.

LIMA BEAN RUBBERS.
The Scott Viner Co., Columbus, O.

Markers, Can. See Stampers and Markers.
Marmalades, Machinery. See Pulp Machinery.

MILK CONDENSING AND CANNING MCHY.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
A. K. Robins & Co., Inc., Baltimore.

Molasses Filling Machine. See Filling Mach.

OAKITE, Cleaner.
Oakite Products, Inc., New York.

OYSTER CANNERS' MACHINERY.
Berlin-Chapman Co., Berlin, Wis.
Edw. Renneburg & Sons Co., Baltimore.
A. K. Robins & Co., Inc., Baltimore.
Sprague-Sells Corp., Chicago.
Zastrow Machine Co., Baltimore.

Packers' Cans. See Cans.
Pails, Tubs, etc., Fibre. See Fibre Cont.
Paper Boxes. See Corrug. Paper Products.

PARING MACHINES.
Sinclair-Scott Co., Baltimore.

PASTE, CANNERS'.
Dewey & Almy Chem. Co., Cambridge, Mass.
Edw. Ermold Co., New York City.
Fred H. Knapp Corp., Ridgewood, N. J.
A. K. Robins & Co., Inc., Baltimore.

PEA AND BEAN SEED.
Associated Seed Growers, Inc., New Haven, Conn.
Gallatin Valley Seed Co., Bozeman, Mont.
D. Landreth Seed Co., Bristol, Pa.
J. B. Rice Seed Co., Cambridge, N. Y.
Rogers Bros. Seed Co., Chicago.
Washburn-Wilson Seed Co., Moscow, Idaho.

PEA CANNERS' MACHINERY.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Chisholm-Ryder Co., Niagara Falls, N. Y.
F. Hamachek Mach. Co., Kewaunee, Wis.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.
Huntley Mfg. Co., Brocton, N. Y.
A. K. Robins & Co., Inc., Baltimore.
Scott Viner Co., Columbus, O.
Sinclair-Scott Co., Baltimore.
Sprague-Sells Corp., Chicago.

PEA HULLERS AND VINERS.
Chisholm-Ryder Co., Niagara Falls, N. Y.
F. Hamachek Mach. Co., Kewaunee, Wis.
Scott Viner Co., Columbus, Ohio.

PEA VINE FEEDERS.
Chisholm-Ryder Co., Niagara Falls, N. Y.
F. Hamachek Mach. Co., Kewaunee, Wis.
Scott Viner Co., Columbus, Ohio.

PEELING KNIVES.
A. K. Robins & Co., Inc., Baltimore.
Peach and Cherry Pitters. See Fruit Pitters.

PEELING MACHINES.
A. K. Robins & Co., Inc., Baltimore.
Sinclair-Scott Co., Baltimore.

PEELING TABLES, Continuous.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Huntley Mfg. Co., Brocton, N. Y.
A. K. Robins & Co., Inc., Baltimore.
Sprague-Sells Corp., Chicago.
Perforated Sheet Metal. See Sieves and Screens.
Picking Boxes, Baskets, etc. See Baskets.
Picking Belts and Tables. See Pea Can. Mchy.

PINEAPPLE MACHINERY.
Sprague-Sells Corp., Chicago.
Zastrow Machine Co., Baltimore.
Platform and Wagon Scales. See Scales.
Picking Belts and Tables. See Pea Machinery.
Power Presses. See Can Makers' Machinery.
Power Transmission Machinery. See Power Plant Equipment.

PRESERVERS' MACHINERY.
F. H. Langsenkamp Co., Indianapolis.
A. K. Robins & Co., Inc., Baltimore.
Sprague-Sells Corp., Chicago.

PULP MACHINERY.
Berlin-Chapman Co., Berlin, Wis.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore.
Sinclair-Scott Co., Baltimore.
Sprague-Sells Corp., Chicago.

PUMPS, Air, Water, Brine, Syrup.
Ams Machine Co., Max, New York City.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore.
Slaysman & Co., Baltimore.
Retort Crates. See Kettles, Process.
Rubber Stamps. See Stencils.
Saccharometers (syrup testers). See Cany. Sup.

SALT DISTRIBUTING MACHINE.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore.

SEALING MACHINES, Box.
A. K. Robins & Co., Inc., Baltimore.
Fred H. Knapp Corp., Ridgewood, N. J.
Sanitary Cleaner and Cleanser. See Cleaning Compounds.
Sanitary (open top) Cans. See Cans.
Sardine Knives and Scissors. See Knives.

SCALDERS, Tomato, Etc.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Huntley Mfg. Co., Brocton, N. Y.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore.
Sprague-Sells Corp., Chicago.
Scalding and Picking Baskets. See Baskets.
Sealing Machines, Bottle. See Bottlers' Mchy.

SEEDS, Canners', All Varieties.
Associated Seed Growers, Inc., New Haven, Conn.
D. Landreth Seed Co., Bristol, Pa.
Livingston Seed Co., Columbus, Ohio.
J. B. Rice Seed Co., Cambridge, N. Y.
Rogers Bros. Seed Co., Chicago.
Washburn-Wilson Seed Co., Moscow, Idaho.
Separators. See Pea Canning Mchy.
Sealing Machines, Cans. See Closing Machines.

SHEET METAL WORKING MACHINERY.
Ams Machine Co., Max, New York City.
E. W. Bliss & Co., Brooklyn, N. Y.
Cameron Can Mchy. Co., Chicago, Ill.
Slaysman & Co., Baltimore.

SIEVES AND SCREENS.
Huntley Mfg. Co., Brocton, N. Y.
Sinclair-Scott Co., Baltimore.

SILKING MACHINES, Corn.
Berlin-Chapman Co., Berlin, Wis.
Huntley Mfg. Co., Brocton, N. Y.
Sprague-Sells Corp., Chicago.
Sorters, Pea. See Cleaning and Grading Mchy.

SPEED REGULATING DEVICES (for Machines, Belt Drives, etc.).
Berlin-Chapman Co., Berlin, Wis.
Huntley Mfg. Co., Brocton, N. Y.
Sinclair-Scott Co., Baltimore.
Supply House and General Agents. See General Agents.

STAMPERS AND MARKERS.
Ams Machine Co., Max, New York City.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Steam Jacketed Kettles. See Kettles.
Steam Retorts. See Kettles, Process.
STENCILS, Marking Pots and Brushes, Brass Checks, Rubber and Steel Type, Burning Brands, etc.
A. K. Robins & Co., Inc., Baltimore.

STIRRERS FOR KETTLES.
F. H. Langsenkamp Co., Indianapolis, Ind.
Sprague-Sells Corp., Chicago.

STRING BEAN MACHINERY.
Berlin-Chapman Co., Berlin, Wis.
Burton Cook & Co., Rome, N. Y.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Huntley Mfg. Co., Brocton, N. Y.
A. K. Robins & Co., Inc., Baltimore.
Sprague-Sells Corp., Chicago.

SYRUPING MACHINES.
Ayars Machine Co., Salem, N. J.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.
E. J. Judge, Alameda, Calif.
A. K. Robins & Co., Inc., Baltimore.
Sprague-Sells Corp., Chicago.
Tables, Picking. See Canners' Machinery.

TANKS, Metal.
Berlin-Chapman Co., Berlin, Wis.
F. H. Langsenkamp Co., Indianapolis, Ind.
Slaysman & Co., Baltimore.
Sprague-Sells Corp., Chicago.

TANKS, Glass Lined, Steel.
F. H. Langsenkamp Co., Indianapolis, Ind.
Sprague-Sells Corp., Chicago.

TANKS, Wooden.
Sprague-Sells Corp., Chicago.

TELEPHONE, TELEGRAPH, Quick Service.
Amer. Telephone and Telegraph Co.—Everywhere.
Testers, Can. See Can Makers' Machinery.
Ticket Punches. See Stencils.

TIN PLATE.
American Sheet and Tin Plate Co., Pittsburgh.
Melingriffith Co., Cardiff, England.

TOMATO CANNING MACHINERY.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Huntley Mfg. Co., Brocton, N. Y.
A. K. Robins & Co., Inc., Baltimore.
Sprague-Sells Corp., Chicago.

TOMATO PEELING MACHINE.
A. K. Robins & Co., Inc., Baltimore.

TOMATO WASHERS.
Berlin-Chapman Co., Berlin, Wis.
Huntley Mfg. Co., Brocton, N. Y.
F. H. Langsenkamp Co., Indianapolis, Ind.
A. K. Robins & Co., Inc., Baltimore.
Sprague-Sells Corp., Chicago.
Variable Speed Countershafts. See Speed Reg.

VINERS & HULLERS.
Chisholm-Ryder Co., Niagara Falls, N. Y.
Frank Hamachek Mach. Co., Kewaunee, Wis.
Scott Viner Co., Columbus, Ohio.

WAREHOUSING AND FINANCING.
Guardian Warehousing Co., Chicago.
Washers, Bottle. See Bottlers' Machinery.

WASHERS, Can and Jar.
Ayars Machine Co., Salem, N. J.
Berlin-Chapman Co., Berlin, Wis.
Hansen Cang. Mchy. Corp., Cedarburg, Wis.
A. K. Robins & Co., Inc., Baltimore.

WASHERS, Fruit, Vegetable.
Ayars Machine Co., Salem, N. J.
Huntley Mfg. Co., Brocton, N. Y.
Scott Viner Co., Columbus, O.
Sprague-Sells Corp., Chicago.
Washing and Scalding Baskets. See Baskets.
Windmills and Water Supply Systems. See Tanks, Wood.

WRAPPERS, Corrugated, Bottle.
Hinde & Dauch Paper Co., Sandusky, Ohio.
Wrapping Machines, Can. See Labeling Mach.

WYANDOTTE, Sanitary Cleaner.
J. B. Ford Co., Wyandotte, Mich.

LANDRETH'S SEEDS

TOMATO---"The Landreth"

Price $5.00 per pound

"The Landreth" is as red as The Landreths' Red Rock and two weeks earlier, ripening about the time of The **Earliana.**

The vine is short stemmed, unusually healthy, astonishingly productive. The shape of the fruit is full bottomed, that is, round at the bottom, **free from cracks, with very little cavity** at the stem end.

The Landreth Tomato is, in appearance, after the order of the Chalk's Jewel, but is five days earlier, larger fruited, more productive, picking over a longer period, of better color, more solid, and does not crack.

Its ever-bearing qualities extend the picking season at least four weeks, giving the grower an opportunity for greatly increased profits, and large pickings, before there is likelihood of being killed by the frost.

CANNERS' VARIETIES

EARLY RIPENERS

The Landreth	**$ 5.00**
Earliana	**2.75**
Bonny Best	**2.75**
Chalk's Jewel	**2.75**
John Baer	**2.75**
Marglobe	**4.50**

MEDIUM RIPENERS

Delaware Beauty	**Sold out**
Bloomsdale	**8.00**

LATE RIPENERS

Landreths' Red Rock	**3.25**
Stone	**2.50**
Greater Baltimore	**2.75**
Radibaugh Special, True Stock	**2.75**

Spot Beans

They are very short, shorter than they have been for many years except last year owing to poor growing conditions throughout the entire year. Prices are very high, several varieties cannot be obtained at any price. We have a few however. If you need Beans, write us stating kinds and quantities and if we have those varieties we will be glad to quote you.

Spot Peas

If you are in need of any Spot Alaskas, take the matter up with us before buying and we will quote you most attractive prices.

Future Seeds Or 1930 Crop Seeds

Write us what you want in future Seeds and we will quote, meeting the prices of other reliable houses.

Marglobe

The Marglobe Tomato is Globe in shape, Red in color. It is early. It is a very shy seeder; consequently is very meaty. The walls are thick. It is a good Tomato for shipping and is a wonderful processed Tomato. We recommend it highly. The Seed we grew, we obtained the Seed Stock from Dr. Pritchard of the Department of Plant Industry, Agricultural Department, Washington, D. C. and it is absolutely true stock. ***All grown here by ourselves.***

D. Landreth Seed Co.

Business Founded 1784

BRISTOL PENNSYLVANIA

The Oldest Seed House in America
146 Years in the Seed Business

PUREBRED BURPEES STRINGLESS GREEN POD BEANS
on
IDAHO BREEDING FARM

DEPENDABLE SEED

is the foundation of a

SUCCESSFUL and PROFITABLE PACK

Our Intensive Breeding of Parent Stocks Insures Continuous High Quality.
800 Acres are devoted to BREEDING GROUND operations.

DISTINCTIVE SERVICE

through

Widespread Planting of field crops in various States which gives strong assurance of satisfactory deliveries on contract orders.

Warehouses advantageousuly located for prompt shipment and at minimum transportation costs.

GROWERS OF ALL KINDS OF SEEDS THAT CANNERS USE.

Associated Seed Growers, Inc.

NEW HAVEN, CONN.

Comprising

The EVERETT B. CLARK SEED COMPANY
JOHN H. ALLAN SEED COMPANY
N. B. KEENEY & SON, INC.

Production Branches in Ten States.